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ABSTRACT

Volume 3 in a projected series of four annotated bibliographies contains 453 entries published from 1972 through 1973 on prevention and early care for young children (primarily under two years of age) afflicted with cerebral palsy or related developmental disabilities. Arranged alphabetically by author's name, listings usually include title, source, volume number and pagination, publication date, and an abstract of the document's contents. Also included are author and subject indexes. (LH)

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CEREBRAL PALSY AND RELATED DEVELOPMENTAL DISABILITIES -PREVENTION AND EARLY CARE

An Annotated Bibliography

Volume III

1973
(Includes Items Published 1972-1973)

Compiled by

RAYMOND R. REMBOLT, M.D., and BETH ROTH, M.A.

NCEMMH Reprint Series
Publication Number NC-75.905

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FOREWORD

Cerebral Palsy and Related Developmental Disabilities--Prevention and Early Care: An Annotated Bibliography, compiled by Raymond R. Rembolt, M.D., and Beth Roth, was sponsored by the United Cerebral Palsy Associations, Inc. It consists of three volumes: Volume I (1971) includes items published from before 1964 through 1971; Volume II (1972) includes items published 1968-1972; and Volume III (1973) includes items published in 1972 and 1973. The project was supported partly by the Association and partly by the UCPA "Nationally Organized Collaborative Project to Provide Comprehensive Services for Atypical Infants and Their Families" USOE (Bureau of Education for the Handicapped)--Grant No. 0-71-4492(616). Selection and compilation of the material took place mainly at the University Hospital School of The University of Iowa.

A panel of experts appointed by NCEMMH to review the bibliography has recommended that NCEMMH arrange for publication of the bibliography. Therefore, as a service to all personnel working with handicapped young children--educators, physicians, and researchers--NCEMMH has provided for its publication, and, with the assistance of the Ohio State University Press, for its nationwide distribution on a nonprofit basis.

This is the first edition. The NCEMMH Reprint Series encompasses not only previously published materials which have gone out of print but also those which NCEMMH is publishing on behalf of another organization.

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PREFACE

Volume III (1973) constitutes the third volume in this series of four. It follows a format similar to that of the two previous volumes - those of 1971 and 1972. Annotations herein have been prepared from selected publications which were not considered in the previous volumes. The special focus relates to prevention and early care of those young children who have cerebral palsy or related disabilities. The same emphasis existed in the preparation of the prior volumes of this series.

The body of this volume is constituted of 453 annotations of published works which pertain to various aspects of the subject. Nine hundred forty-two authors created the works from which annotations were developed. Furthermore, approximately ninety percent of the authors presented herein are listed for the first time in this series.

Noteworthy, with the completion of Volume III (1973) there has been a total of 1,071 different annotations in this series, all of which pertain to the subject. Peculiar to Volume III (1973) is the observation that over ninety-two percent of the publications which were selected for annotation were published in 1973. An additional five percent were published in 1972. Thus, the reported material is essentially current at this time.

It is a pleasure to recognize some of those who have especially contributed to this project. Mrs. Beth Roth has selected and annotated a most significant portion of the publications which were chosen. Miss Bonnie Knowles has typed and arranged the material presented herein. The University Hospital School at the University of Iowa continues as the site of operation for this undertaking. To all who have contributed to this project we are deeply grateful.

Raymond R. Rembolt
University Hospital School
University of Iowa

Iowa City, Iowa
August 14, 1974

1. Abramson, Harold, ed: *Symposium on the Functional Physiopathology of the Fetus and Neonate; Clinical Correlations*. St. Louis: C.V. Mosby, 1971. 182 pp.

This Symposium was conducted in February, 1970 by the Special Committee on Infant Mortality, Medical Society of the County of New York, and was supported in part by The Association for the Aid of Crippled Children in New York City. Dr. Abramson, in initially describing the purpose and scope of the Symposium, summarizes the subjects considered in each of the 3 Parts of the Symposium. Part I contains papers relating to "in utero physiopathologic diagnosis" while Part II consists of papers dealing with "extrauterine physiopathologic diagnosis." "General considerations" are discussed in the papers of Part III. A summary and conclusions are presented.

2. Alexopoulos, K.A.: "The Importance of Breech Delivery in the Pathogenesis of Brain Damage," *Clinical Pediatrics*, 12:248-249, April, 1973.

Studied were 467 children who weighed 1,500 grams or more at birth and who were breech deliveries. Some 5.3% of these babies died in the perinatal period. Of the 443 surviving infants, 373 left the hospital in apparently good condition. Data on the other 70 infants is presented as are attempts made to follow-up on the children at ages 2 to 2 1/2 years and 8 years. "Clearly shown in our series is a high perinatal mortality (5.3 per cent) and a high rate of morbidity (15.8 per cent). A most important finding is that 7.2 per cent of the injuries were of a permanent and serious nature."

3. Alper, Milton H., and Roaf, Edward R.: "Anesthetic Management of the High-Risk Pregnancy," *Clinical Obstetrics and Gynecology*, 16:347-360, March, 1973.

General considerations are discussed as in anesthetic management in hypertensive disorders of pregnancy and in obstetric cases involving hemorrhage. Anesthetic practices at the Boston Hospital for Women are described.

4. American Academy of Pediatrics. Committee on Children with Handicaps. "Day Care for Handicapped Children," *Pediatrics*, 51:968, May, 1973.

A statement on this subject by this committee is presented.

5. "Amniocentesis: Rewarding but Risky," *Medical World News*, 14:22, December 28, 1973.

Reported are results of a Swedish study which indicate that although the rewards outweigh the risks in amniocentesis, "the dangers are real enough to justify using amniocentesis only for the most pressing reasons, and even then only when the physician is thoroughly skilled in the procedure and has been able to locate the site of the placenta in advance by ultrasound."

6. Andrews, Joan: "Thiocyanate and Smoking in Pregnancy," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:810-814, September, 1973.

In this described study, when thiocyanate levels were measured at delivery in the cord and maternal blood of both smokers and non-smokers, the amount of thiocyanate was found to be "significantly greater if the mother smoked during pregnancy." When

thiocyanate levels were related to the number of cigarettes smoked during the 24 hours prior to delivery, the results obtained were similar. Methods used, results obtained, and their implications are presented. "It is suggested that the cyanide and thiocyanate present in tobacco are of importance in the aetiology of the increased incidence of light-for-dates babies and the decrease in hypertension in pregnancy associated with maternal smoking."

7. Arcangel, Corrine, and Schoenthal, Richard: "Conversion of Ring Walker to Chair for Child With Multiple Orthopedic Deformities," *Physical Therapy*, 53:1296-1297, December, 1973.

   Equipment is described and pictured.

8. Aubry, Richard H., and Pennington, John C.: "Identification and Evaluation of High-Risk Pregnancy: The Perinatal Concept," *Clinical Obstetrics and Gynecology*, 16:3-27, March, 1973.

   Described is the experience over an 8 year period of the authors in the "identification of a high-risk population, development of a perinatal care system, and evaluation of the outcome of such care." The Maternal and Child Health Care (MCHC) Index and a Labor Index were used in the identification process and are explained. Other scoring means that have been used to identify the high-risk patient are also described. Then discussed is the evaluation of the high-risk fetus and newborn in the perinatal center. Special methods of evaluation are individually considered including the urinary estrogen/creatinine ratio, tocodynamometry, the urinary urea nitrogen/total nitrogen ratio, ultrasound, and the lecithin/sphingomyelin ratio. Assessing the results of intensified perinatal care is also considered.

9. Avery, Gordon B.: "Neonatal Jaundice; Modern Trends in Management," *Postgraduate Medicine*, 54:187-190+, October, 1973.

   Aspects considered include the causes of jaundice, kernicterus, management, and complications.

10. Aziz, Ezzat M., and Lipsitz, Philip J.: "A Case of Transient Hypoglycemia and Hyperglycemia in a Full-Term Neonate," *Clinical Pediatrics*, 12:363-366, June, 1973.

    Such a case is presented. At age 4 years this child was profoundly mentally retarded, had major motor seizures, and was microcephalic and spastic quadriplegic. "That prompt correction of the hypoglycemia in our child did not relieve the convulsions suggests that the primary lesion was central nervous system (CNS) damage."

11. Baker, Carol J.; Barrett, Fred F.; Gordon, Ralph C.; and Yow, Martha D.: "Suppurative Meningitis Due to Streptococci of Lancefield Group B: A Study of 33 Infants," *Journal of Pediatrics*, 82:724-729, April, 1973.

Presented are the clinical and bacteriologic findings of a study of 33 infants with meningitis due to group B streptococci. The infants were divided into the early-onset group (meningitis diagnosed at < 10 days of age) and the late-onset group (meningitis diagnosed at > 10 days of age). There were 12 infants in the former group and 21 in the latter. In 92% of the early-onset group maternal obstetric complications had been detected while this was true in only 19% of the late-onset group. The illness was classified as being severe in 83% of the early-onset group and in only 33% of the late-onset group. There was a 58% mortality rate in the early-onset group as compared to a 14% mortality rate in the late-onset group. "Only one of the 23 survivors exhibited neurologic sequelae at the time of follow-up examination." Other results are presented, and the findings are discussed, including the modes of acquisition and transmission of group B streptococcal meningitis in the 2 groups of infants.

12. Ballou, Brynn, and Todd, Thomas W.: "Understanding Developmental Disabilities; A 'Sensitization' Workshop Program," *Children Today*, 2:28-29, September-October, 1973.

Described is such a program of 6 activities, designed by the Developmental Disabilities Development Consultation Team of the Hamilton County Diagnostic Clinic, Cincinnati, Ohio to acquaint professionals and paraprofessionals with "some of the frustrations and inhibitions which a child may experience in addition to certain developmental disabilities." Each activity in the 'sensitization' workshop is explained. They "dealt with the use of expressive language; fine motor coordination and tactile discrimination; visual and perceptual disorders; gross motor coordination; hearing impairments; and auditory and visual discrimination." It is felt that such a workshop helps those who work with handicapped children to better understand the problems such children have.

13. Banham, Katharine: "Activity Level of Retarded Cerebral Palsied Children," *Exceptional Children*, 38:641-642, April, 1972.

Described is an Activity Level Rating Scale for Infants and Preschool Children which was designed to aid in the psychological assessment of cerebral palsied infants and preschoolers at the North Carolina Cerebral Palsy Hospital. Findings are reported on the repeated rating of 72 young cerebral palsied children of whom 56 were retarded. Findings were compared to IQ test scores, between age groups, between the retarded children and those of normal intelligence, and to scores from a group of 20 nonhandicapped preschoolers.

14. Banham, Katharine M.: "Progress in Mental Development of Retarded Cerebral Palsied Infants," *Exceptional Children*, 39:240, November, 1972.

Findings are reported regarding the testing and retesting at approximately 6 month intervals of 102 retarded cerebral palsied infants on the Cattell Infant Intelligence Scale, the Stanford-Binet Intelligence Scale, Form L-M, and the Quick Screening Scale of Mental Development. The Vineland Social Maturity Scale was also administered and readministered to 39 of the children. Results indicated "that the IQ on the Cattell and Stanford-Binet scales showed greatest reliability, r=.80." "The developmental

quotient on the Quick Screening Scale was nearly as reliable, r=.79, while the social quotient on the Vineland Social Maturity Scale was the least reliable measure of progress of the cerebral palsied infants, r=.33."

15. Banham, Katharine M.: "Social and Emotional Adjustment of Retarded CP Infants," *Exceptional Children*, 40:107, October, 1973.

Thirty-seven cerebral palsied children, ages 18 to 60 months, and 47 nonhandicapped preschool children were observed and rated on scales devised to measure the social and emotional behavior adjustment of infants and preschoolers. Scores were compared for the 2 groups with regard to the cerebral palsied and the normal children of similar age and also with regard to age and intelligence within the 2 groups. Findings are briefly presented. "The fairly consistent relationship of scores on the scales with age and intelligence of cerebral palsied children and the high positive correlations of scores with teachers' ratings suggest that the scores are measuring adjustment and might serve as an aid in assessing progress in social and emotional adjustment of infants and preschool children under 6 years of age."

16. Barton, Leslie L.; Feigin, Ralph D.; and Lins, Robert: "Group B Beta Hemolytic Streptococcal Meningitis in Infants," *Journal of Pediatrics*, 82:719-723, April, 1973.

Reviewed were the records of 44 infants under the age of 3 months who were diagnosed as having meningitis. Group B beta hemolytic streptococcal meningitis (GB-BHS) was identified as described in 11 of these infants. These 11 were then studied and compared to the other cases. Findings regarding birth weight, sex, mortality rates, perinatal factors, neonatal symptoms, antibiotic sensitivity, and subsequent development are described and discussed. Implications are presented. "The significant rate of this organism in infected neonates underscores the need to elucidate the risk of neonatal infection with GB-BHS in infants born to women who are vaginal carriers of this organism."

17. Bayer, Hannes; Bonnar, John; Phizackerley, P.J.R.; Moore, R.A.; and Wylie, Fiona: "Amniotic Fluid Phospholipids in Normal and Abnormal Pregnancy," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:333-337, April, 1973.

In order to assess fetal lung maturity, phospholipids were measured in 86 specimens of amniotic fluid from patients having normal pregnancies and from women whose pregnancies were "complicated by hypertension, fetal growth retardation, rhesus iso-immunization and fetal abnormality." Using the described method of analysis, a sample of only 1 ml is required. The principle alkali-labile lipid was found to be lecithin. The respiratory distress syndrome (RDS) did not develop in any infant who had a prenatal amniotic fluid lecithin level that was at or above 65% of the total phospholipid. However, among those infants who had prenatal amniotic fluid lecithin levels below 60% of the total phospholipid, 3 developed RDS and 3 were anencephalic. "This investigation has confirmed that amniotic fluid phospholipid estimation is of major value in the prediction of fetal pulmonary maturity. A low lecithin level in amniotic fluid may also be due to the presence of congenital malformation, particularly anencephaly."

18. Beagley, H.A.: "Electro-Physiological Tests of Hearing," *British Journal of Disorders of Communication*, 8:115-119, October, 1973.

Various electro-physiological tests of hearing, including those of historical and current interest, are briefly reviewed. They are EEG audiometry, the psychogalvanic skin response, the stapedial reflex, evoked response audiometry, the contingent negative variation, and electro-cochleography. The value of electro-physiological tests of hearing is that they do not depend upon a subjective response by the patient. Thus, they are especially valuable for use with handicapped children.

19. Beintema, David J.: *A Neurological Study of Newborn Infants*. London: Spastics International Medical Publications in association with Heinemann Medical Books, 1968. 178 pp. (Clinics in Developmental Medicine, No. 28.)

In this book are presented the design and results of a study of 49 full term neonates in which "attempts were made to answer the following questions: 1) What is the developmental course of neurological signs during the neonatal period? 2) How consistent are single neurological signs in individual babies from day to day? 3) How consistent are the intercorrelations of neurological signs in individual babies from day to day? 4) To what extent and for how many days are neurological signs related to: a) prenatal and perinatal factors? b) postnatal factors?" Much prenatal, delivery, and postnatal information on the infants was collected. Three subgroups were formed: a fetal distress group of 21 infants, a group of 13 infants with "obstetrical complications," and a low risk group of 15 infants. The infants were studied for 9 days after birth during which time a total of 364 neurological evaluations were performed. These evaluation methods are described in detail as are the "interrelationships of neurological signs in individual babies" and the "syndromes" seen in the infants. Conclusions are presented. Three tables in an appendix and a bibliography are included.

20. Bergsjø, Per; Bakke, Trygve; Salamonsen, Lois A.; Støa, Karl F.; and Thorsen, Thor: "Urinary Oestriol in Pregnancy, Daily Fluctuation and Correlation With Fetal Growth," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:305-310, April, 1973.

Studied were the urinary estriol determinations of 144 women in 214 series of 3 consecutive 24-hour periods. Methods of analysis are described, and much data are presented. There were large day-to-day variations in output. The clinical results were based on the mean 24-hour estriol output over 3 consecutive 24-hour periods. A highly significant difference was found in the estriol output from week 30 of pregnancy onwards between the mothers of "normal-sized babies" and the mothers of "small-for-dates babies." In the cases of the small-for-dates babies the serial estriol levels were found to be "persistently low, or falling, while in pregnancies with normal-sized fetuses the levels rose, often sharply." "The shape of the curves was more important than the actual values in predicting the outcome with regard to the birthweight of the baby."

21. Bergsjö, Per, and Brodtkorb, Christian: "Ultrasonic Fetal Cephalometry in Pre-Eclampsia," *Acta Obstetricia Et Gynecologica Scandinavica*, 52:3:249-251, 1973.

Ultrasonic fetal cephalometry was conducted in 35 patients with pre-eclampsia, and their fetuses were classified retrospectively based on standard newborn infant tables

of birth weight and gestational age. Methods are described. Findings indicated that 17 infants were classified as being above the 25th percentile (normal birth weight for gestational age) and 18 infants were found to be below the 25th percentile (growth-retarded infants). "The biparietal diameters were generally small in growth-retarded fetuses, both in relation to fetuses of normal weight in pre-eclamptic mothers, and in relation to the average measurements in a previously compiled group of normal pregnancies." Implications are discussed.

22. Betts, P.R.; Astley, R.; and Raine, D.N.: "Lead Intoxication in Children in Birmingham," *British Medical Journal*, 1:402-406, February 17, 1973.

Previous research in this area is reviewed. Reported are findings from a study in which blood lead determinations were performed on 192 general pediatric patients and 123 mentally subnormal children during the period of 1966 to 1971. Thirty-eight of these children had a blood lead concentration of greater than 37 µg/100 ml. Of these 38 children, 8 had encephalopathy and 1 died. "All these eight had a blood lead concentration of 99 µg/100 ml or above." Findings regarding anemia, encephalopathy, radiological examination, and seasonal variation in lead poisoning are described. "Children with blood lead concentrations greater than 60 µg/100 ml show radiological evidence of lead intoxication, and treatment for this should be considered when blood lead concentration exceeds 37 µg/100 ml." The results and the diagnostic value of radiology in lead encephalopathy are discussed.

23. Bhagwanani, S.G.; Fahmy, D.; and Turnbull, A.C.: "Bubble Stability Test Compared With Lecithin Assay in Prediction of Respiratory Distress Syndrome," *British Medical Journal*, 1:697-700, March 24, 1973.

Both this bubble stability test, as described, and lecithin concentration determination were performed on 106 samples of amniotic fluid from 94 obstetric patients, of whom 80 delivered within 48 hours of obtaining the samples. A comparison of these 2 tests in relation to the respiration of the neonate resulted in the finding that the bubble stability test gave "too many false negative results to be of value in routine clinical practice, although a positive result is helpful." The idea of the bubble stability test was thought to be "ingenious," and modifications are being investigated.

24. Binks, A.S.; Lind, T.; and McNay, R.A.: "Effect of Rhesus Haemolytic Disease Upon Birthweight," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:301-304, April, 1973.

A total of 3,541 infants who had rhesus hemolytic disease of the newborn (HDN) were studied. The infants were subdivided into 4 listed groups according to the severity of their disease and were also compared as to birth weight. The birth weights of these babies were found to be lower for gestational age than those of unaffected infants. Also the degree to which the birth weights were affected was found to be related to the severity of the HDN. Other similar studies are reviewed.

25. Birch, Herbert G.: "Malnutrition, Learning, and Intelligence," *American Journal of Public Health*, 62:733-784, June, 1972.

After the subject is introduced and the term, malnutrition, is clarified, the types of studies and the evidence from these studies dealing with the relation between

malnutrition, learning, and intelligence are discussed. Much work in this area is reviewed. Also considered are the significance and the implications of the evidence. A sizeable bibliography is included.

26. Bjerkedal, Tor, and Bahna, Sami L.: "The Course and Outcome of Pregnancy in Women With Epilepsy," *Acta Obstetricia Et Gynecologica Scandinavica*, 52:3:245-248, 1973.

The course and outcome of pregnancy were studied in 371 pregnant patients with epilepsy and compared to that of some 112,530 pregnant patients "reporting no disease before or during the pregnancy." Methods of comparison and the findings regarding pregnancy, labor, and birth are reported. "Comparisons indicate that women with epilepsy experience an excess of complications during pregnancy and labour, and that their babies are more frequently born prematurely and of low birth weight, and moreover have an excess of congenital malformations and higher perinatal and neonatal mortality rates." It is concluded that epileptic pregnant women should be considered a high risk group needing special care during pregnancy and labor.

27. Bjerkedal, Tor; Bakketeig, Leiv; and Lehmann, Egil H.: "Percentiles of Birth Weights of Single, Live Births at Different Gestational Periods," *Acta Paediatrica Scandinavica*, 62:449-457, September, 1973.

Data from the National Medical Birth Registry in Norway was analyzed to determine the relation between birth weight and gestational age. Information on a total of 125,486 single, live births from the years 1967 and 1968 was studied. Data is presented regarding "birth weight in relation to gestation period for male and female births," the "effect of sex on relation between birth weight and gestation period," the "effect of parity on relation between birth weight and gestation period," and the "effect of pathology of pregnancy or birth on the relation between birth weight and gestation period." Tables are presented so that this material may be used for reference purposes, and the data is compared to that of other similar studies.

28. Blackburn, Michael G.; Mancusi-Ungaro, Harold R., Jr.; Orzalesi, Marcello M.; Hobbins, John C.; and Anderson, Gerald G.: "Effects on the Neonate of the Induction of Labor With Prostaglandin $F_{2\alpha}$ and Oxytocin," *American Journal of Obstetrics and Gynecology*, 116:847-853, July 15, 1973.

In order to study these effects on the neonate, prostaglandin $F_{2\alpha}$ (11 infants) and oxytocin (12 infants) were employed in a double blind study to induce labor in 23 obstetric cases. Results are presented regarding the described clinical observations and laboratory studies performed on these infants at various postnatal ages. "No significant differences between the two groups of infants could be identified by the methods used." "Therefore, based on the clinical and laboratory data obtained in the present investigation, $PGF_{2\alpha}$ appears to have no direct effect on the fetus or neonate that distinguishes it from oxytocin when administered to the mother for the induction of labor."

29. Blinick, George; Jerez, Eulogio; and Wallach, Robert C.: "Methadone Maintenance, Pregnancy, and Progency," *Journal of the American Medical Association*, 225:447-479, July 30, 1973.

Some 105 narcotic-addicted pregnant women, who were in the Methadone Maintenance Treatment Program of the Beth Israel Medical Center, New York were studied. These

patients, their pregnancies, management in labor, and their newborns are described. No maternal mortality resulted. About 10% of the newborns had depressed Apgar scores, and about 1/3 were premature by weight. No congenital malformations were observed, and follow-up studies have shown growth and development to be normal.

30. Bobath, Karel: *The Motor Deficit in Patients With Cerebral Palsy.* London: Spastics Society Medical Education and Information Unit in association with Heinemann Medical Books, 1966. 54 pp. (Clinics in Developmental Medicine, No. 23.)

Dr. Bobath introduces this subject by making general remarks concerning normal motor development and motor development in cerebral palsy. In Chapters II and III he describes some special features of normal motor development and motor development in cerebral palsy, respectively. Then discussed individually are 3 factors which "should be considered in every case of cerebral palsy." These are: "1) The type and strength of the abnormal muscle tone; 2) The type of disturbance of reciprocal innervation; 3) The distribution of the condition and the prevailing patterns of posture and movement." "The tonic reflexes of particular relevance in cerebral palsy" are then explained. These are: "1) The tonic labyrinthine reflex 2) The tonic neck reflexes: a) the asymmetrical tonic neck reflex b) the symmetrical tonic neck reflex 3) Associated reactions 4) The positive and negative supporting reactions." The "interpretation of clinical findings" and the various "types of cerebral palsy" are considered in the final 2 chapters. Many photographs and a bibliography are included.

31. Boham, Isabelle M., and Jaeger, D. Lavonne: "Guidelines for Patient Evaluation," *Physical Therapy*, 53:1067-1069, October, 1973.

Such guidelines to be used by the physical therapist are presented in outline-list form. They consist of 15 major categories to be considered when evaluating patients. Category emphasis, however, will vary with the individual patient.

32. Bolognese, Ronald J.; Corson, Stephen L.; Fuccillo, David A.; Sever, John L.; and Traub, Renee: "Evaluation of Possible Transplacental Infection With Rubella Vaccination During Pregnancy," *American Journal of Obstetrics and Gynecology*, 117: 939-941, December 1, 1973.

Studied were 8 seronegative women who received 0.5 ml of live, Cendehill strain, attenuated rubella virus vaccine at least 3 weeks prior to undergoing abortion. Rubella virus was isolated in 3 of the 8 cases in the abortus material. In 1 of these 3 patients the virus was also isolated in a cervical culture. "An attempt was made to verify that the virus recovered was vaccine virus by inoculation into New Zealand white rabbits." Findings indicated that the antibody titers were identical with those of the Freedman 'wild' strain. These results are discussed.

33. Bossarti, H.; Cruz, J.M.; Huber A.; Prodʹhom, L.S.; and Sistek, J., eds.: *Perinatal Medicine.* Bern: Hans Huber Publishers, 1973. 399 pp.

This volume contains the papers presented at the Third European Congress of Perinatal Medicine held in Lausanne in April, 1972. Included are the 3 main lectures;

the papers from the 4 round tables on "perinatal pharmacology," "the cesarean section," "the prognosis of the high-risk newborn," and "monitoring and intensive care in perinatal medicine"; and over 200 "free papers."

34. Boyd, I.E., and Holt, E.M.: "Changes in Fetal Heart Rate During Intrauterine Transfusion," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:438-441, May, 1973.

A total of 38 intrauterine fetal transfusions performed on 18 patients were studied with regard to changes detected in the fetal heart rate (FHR). Monitoring methods are described. Four of the 38 fetuses died within 48 hours of transfusion. Results indicated that the amount of the rise in FHR due to the insertion of the needle and the transfusion tended to be less in those fetuses who died, but this reduction was not statistically significant when compared to those fetuses who survived, and this pattern was not found to have prognostic value. No effect on FHR was observed when the rate of blood infusion was varied.

35. Bratlid, Dag: "Reserve Albumin Binding Capacity, Salicylate Saturation Index, and Red Cell Binding of Bilirubin in Neonatal Jaundice," *Archives of Disease in Childhood*, 48:393-397, May, 1973.

Studied with regard to reserve albumin binding capacity, salicylate saturation index, and red cell binding of bilirubin were 105 blood samples obtained from 72 newborns having neonatal jaundice. All methods of analysis are described, and comparative results are presented. The findings showed there to be several discrepancies. "2 infants with clinical symptoms of bilirubin encephalopathy had abnormally large amounts of red cell bound bilirubin, though the HBABA binding capacity and salicylate saturation index did not suggest a risk of bilirubin encephalopathy. On the other hand, 48 of the other samples showed 'risk values' for saturation index and 2 of the other samples showed such values as judged by the HBABA method." These inconsistencies are discussed, and on the basis of the results, "it is suggested that determination of red cell bound bilirubin may have clinical value in patients with neonatal jaundice, especially in cases of suggested kernicterus." The HBABA binding capacity and the salicylate saturation index were not seen as being useful in identifying those infants likely to develop kernicterus.

36. Bratlid, Dag, and Langslet, Asbjørn: "Displacement of Albumin-Bound Bilirubin by Injectable Diazepam Preparations in Vitro," *Acta Paediatrica Scandinavica*, 62:510-512, September, 1973.

When the injectable diazepam preparations, Valium, Stesolid, and Vival, were studied as described regarding their effect on the displacement of bilirubin from albumin in vitro, it was found that Valium and Stesolid both "caused marked displacement of bilirubin and this effect was potentiated by a reduction in pH" (from 7.4 to 6.8). Vival, however, showed no displacement effect on bilirubin at a pH of 7.4 and only a slight effect at pH 6.8. Valium and Stesolid contain benzoate in the buffer preservative while Vival does not.

37. Braun, Richard M.; Hoffer, M. Mark; Mooney, Vert; McKeever, John; and Roper, Brian: "Phenal Nerve Block in the Treatment of Acquired Spastic Hemiplegia in the Upper Limb," *Journal of Bone and Joint Surgery*, 55-A:580-585, April, 1973.

The treatment of 24 adults and 10 children is described. The method consists of direct exposure of the motor nerves and the injection of 3-5% phenal solution into the nerve in doses of 2 to 5 milliters. Although muscle tone was initially diminished, the benefit usually lasted less than 6 months. Results of treatment during this period have been encouraging. "During this time other therapy programs can be followed designed to prevent contractures or to strengthen and train weakened or transferred muscle units. A few patients have shown prolonged benefit and it appears that most of these patients have had selective motor control of their spastic muscles prior to motor nerve block treatment."

38. Brazelton, T. Berry: "Assessment of the Infant at Risk," *Clinical Obstetrics and Gynecology*, 16:361-375, March, 1973.

The importance of new assessment techniques and the use of the Apgar score are considered. Also discussed are the examination at birth, the assessment of the placenta and cord blood at birth, neurological evaluations, behavioral examinations during the recovery period, and the "evaluation of mother-infant attachment behavior."

39. Brown, Gerri A.; Kuelling, Barbara L.; and Dickson, Janet M.: "Objective Measurement of Motor Skill Acquisition," *Physical Therapy*, 53:864-866, August, 1973.

A means of objectively measuring patient progress in motor skills was developed at the State Home and Training School in Wheatridge, Colorado where an average of 70 mentally retarded children, ages 4 months to 12 years, are treated in the physical therapy department each day, 5 days a week. "Those children seen in the physical therapy department fall into two primary categories: 1) delayed motor development, and 2) physical or motor disablement." The program of the department is explained as are methods used to gather objective data from the treatment program. This data can be valuable to the therapist in assessing the success of the patient's treatment program as well as to "his supervisor in increasing efficiency and providing justification for continued and future employment needs."

40. Brown, Robert, and Robertson, Euan G.: "Fetal Heart Monitoring During Intrauterine Transfusion," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:116-119, February, 1973.

Studied over a period of 2 years were 37 patients who had a total of 66 intrauterine transfusions. Explained are the technique used for the transfusions, the method used for fetal assessment, and the modifications in the transfusion technique which were employed. Four groups of patients are described in the results. Although the findings indicated a poor prognosis for the fetus when the fetal heart rate fell during the intrauterine transfusion, the use of atropine was found to improve chances of fetal survival. "It would seem to us that monitoring of the fetal heart during transfusion and the use of atropine have led to improvements in technique and survival." Of the 37 births studied, 21 infants survived, 13 were stillbirths, and 3 infants died in the neonatal period.

41. Bryan, M. Heather; Wei, Patrick; Hamilton, J. Richard; Chance, Graham W.; and Swyer, Paul R.: "Supplemental Intravenous Alimentation in Low-Birth-Weight Infants," *Journal of Pediatrics*, 82:940-944, June, 1973.

In this reported study, 10% dextrose solution was administered intravenously to 15 low-birth-weight (≤1,300 gm), gastric-fed, control infants while a similar group of 15 infants received 10% dextrose plus 3.5% fibrin hydrolysate. Care methods and results are presented. The rate of survival was not increased in those infants who received the protein hydrolysate, but they did regain their birth weights sooner and they had fewer apneic episodes than did the controls. "The time required to regain birth weight was directly related to the total nitrogen intake." Other findings include a high rate of hyperglycemia in both groups, the occurrence of azotemia and raised plasma amino acid levels in those babies receiving the protein hydrolysate, and an unsatisfactory, high level of bacterial contamination of solutions in both groups. Results are discussed.

42. Bryant, Gillian M.; Davies, Kathleen J.; Richards, F. Marie; and Voorhees, Susan: "A Preliminary Study of the Use of the Denver Developmental Screening Test in a Health Department," *Developmental Medicine and Child Neurology*, 15:33-40, February, 1973.

The Denver Developmental Screening Test (DDST) is described. This test was used in the City of Cardiff Public Health Department in the described study to determine if it could achieve 4 aims: "(1) whether the test could be used in routine work; (2) whether the test was reproducible by two different observers over a short period of time; (3) whether there were any differences between doctors and health visitors in the use of the test; and (4) whether the test could be validated as a method for the selection of children requiring further investigation." Methods of the study are described including the training of the 8 examiners (4 medical officers and 4 health visitors), the selection of the infants to be tested (96 babies, ages 12-13 months), and the method of assessment. The children were followed-up 6 months later with complete medical and neurological examinations. On the basis of the presented results, the DDST was found to be easy to give in the homes of the infants and to be reproducible. No significant differences with regard to results between the doctors and the health visitors was rated. "It is pointed out that the Denver Test is a tool only for the screening of child development, that it should be combined with tests for hearing and vision, and that it should be followed up by detailed examination if abnormality is suspected."

43. Buda, Francis B.; Rothey, William B.; and Rabe, Edward F.: "Hypotonia and the Maternal-Child Relationship," *American Journal of Diseases of Children*, 124:906-907, December, 1972.

Described are the cases of 2 infants, ages 8 months and 17 months, respectively, when first seen. Both children displayed, among other complaints, "concomitant generalized hypotonia and maternal emotional deprivation." "Hypotonia began to resolve in each case when intensive substitute mothering was instituted."

44. Bushong, Stewart C.; Werch, Angel; Prasad, Naresh; and Glaze, Sharon A.: "Absence of Chromosome Damage in the Newborn Infant Following X-Ray Pelvimetry," *American Journal of Obstetrics and Gynecology*, 117:933-938, December 1, 1973.

Four principle x-ray examinations of use with obstetric patients are listed as are 6 clinical obstetric situations in which x-ray diagnosis may be used. Estimated in 61 obstetric patients was the radiation dose incurred during x-ray pelvimetry. In 25 of their infants the cytogenetic response of peripheral lymphocytes was determined. The procedure of x-ray pelvimetry and the cytogenetic technique used are explained. The average midline fetal dose was 1,035 mrads for those patients who received 2 projections and 1,860 mrads for those who received more than 2 projections. "There was no evidence of radiation induced chromosomal damage in the newborn infants following x-ray exposure in utero." Findings are discussed.

45. Butler, N.R., and Goldstein, H.: "Smoking in Pregnancy and Subsequent Child Development," *British Medical Journal*, 4:573-575, December 8, 1973.

Children in the National Child Development Study in Britain were tested at ages 7 and 11 years as described to determine any relationship between maternal smoking during pregnancy and subsequent child development. Children of mothers who smoked during pregnancy were found to be both physically and mentally deficient with the extent of the deficiency increasing with the amount smoked after the fourth month of pregnancy. "Children of mothers who smoked 10 or more cigarettes a day are on average 1.0 cm shorter and between three and five months retarded on reading, mathematics, and general ability compared with the offspring of non-smokers, after allowing for associated social and biological factors."

46. Campbell, Stuart; Wladimiroff, J.W.; and Dewhurst, C.J.: "The Antenatal Measurement of Fetal Urine Production," *Journal of Gynaecology of the British Commonwealth*, 80:680-686, August, 1973.

The value of having a direct method for such measurement is explained. It "would lead to important advances in our understanding of fetal physiology and of the fetal response to conditions such as pre-eclampsia, diabetes mellitus and chronic uteroplacental insufficiency." Described is an ultrasonic technique which was designed to assess the hourly fetal urine production rate (HFUPR). Results of its usage on 50 pregnant patients are presented. The method is concluded to be "accurate, non-invasive and causes no hazard to the fetus nor discomfort to the mother."

47. Capute, Arnold J., and Biehl, Robert F.: "Functional Developmental Evaluation: Prerequisite to Habilitation," *Pediatric Clinics of North America*, 20:3-26, February, 1973.

The concern of this article is the assessment of the current developmental status of the child. The term, "functional evaluation," is defined and discussed. It should be viewed as a dynamic process, the results of which change with the child, rather than as a process of classification. Methods of screening and identifying the child for developmental delay are discussed, and "a sample pediatric interview scale" is presented. Then considered are some of the specific areas in which children can be objectively evaluated for developmental attainment. These include posture and locomotion, manipulative skills, self-care development, and language. Following this, the major conditions that are associated with developmental deviation are individually described including cerebral palsy, global mental retardation, minimal brain dysfunction, and sensory deficits. Conclusions are presented.

48. Carrington, Elsie R.: "Diabetes in Pregnancy," *Clinical Obstetrics and Gynecology*, 16:28-46, March, 1973.

The pregnancy complication of maternal diabetes is considered in this article. The natural history of diabetes and the necessary maternal metabolic adaptations during pregnancy are described. Special problems in the management of the diabetic pregnancy and the importance of fetal monitoring and the timing of the delivery in diabetic pregnancies are among the other aspects discussed.

49. Catford, G.V., and Oliver, A.: "Development of Visual Acuity," *Archives of Disease in Childhood*, 48:47-50, January, 1973.

Using the phenomenon of optokinetic fixation nystagmus, a hand-held, electrically operated apparatus was devised for the purpose of assessing visual acuity in infants. "A total of 171 children was examined, of which 118 were under 1 year of age and 53 over 1 year." A graph of the normal development of visual acuity was developed and is presented. Findings indicated that babies fixate from age 2 weeks, but it is not until age 6 weeks that optokinetic nystagmus can be induced to an individual target. Adult visual acuity is reached by age 3 years. The advantages of the described instrument are discussed. "Since it is hand held, the instrument can be used anywhere, and this extends its application to domiciliary and field work with the handicapped (as well as possibly to animal species). It should be a useful clinical tool in the objective assessment of visual acuity."

50. Cavell, B.; Svenningsen, N.; Thulin, T.; and Schersten, B.: "Rapid Detection of Neonatal Hypoglycaemia; Evaluation of Dextrostix Reflectance Meter System," *Archives of Disease in Childhood*, 48:398-400, May, 1973.

The usefulness of this system in diagnosing neonatal hypoglycemia was evaluated by making 264 determinations by the Dextrostix Reflectance Meter (DRM) system in 106 infants referred for various clinical conditions. Results were compared to those obtained from the glucose oxidase method of analysis. The DRM was found to underestimate the blood glucose values which thus led to an overdiagnosis of hypoglycemia. During the study, it was found that by using the back of the standardization strip, the correlation between the DRM system and the glucose oxidase method could be improved. On the basis of these results, "it is concluded that the DRM provides an easy and rapid method for detecting hypoglycaemia in the newborn." "However, before the DRM is used routinely in the newborn nursery the instrument should be calibrated adequately using blood of known glucose concentrations."

51. Chan, Wan H.; Paul, Richard H.; and Toews, Judy: "Intrapartum Fetal Monitoring: Maternal and Fetal Morbidity and Perinatal Mortaligy," *Obstetrics and Gynecology*, 41:7-13, January, 1973.

Complications resulting from the usage of the intrauterine catheter and the fetal electrocardiogram electrode in the monitoring of 1,150 labors were studied. Findings are reported regarding the maternal febrile morbidity, uterine perforation, fetal morbidity, and perinatal mortality.

52. Chance, Burton, Jr.: "The Role of the Treatment Center in the Care of the Cerebral Palsied," *Clinical Proceedings of Children's Hospital National Medical Center*, 29:165-166, July-August, 1973.

In this short contribution Dr. Chance discusses the origin of treatment centers and their contributions.

53. Chapple, Charles C.: *Developmental Defects: Some Thoughts on Their Causes*. White Plains, N.Y.: National Foundation of the March of Dimes, September, 1972. 79 pp. (Birth Defects: Original Article Series, Volume VIII, No. 6.)

"The author presents his reasons for questioning accepted etiologies of birth defects and suggests that these defects may result from a diminution in the amount of amniotic fluid causing contact between the embryo and uterine musculature. The diminution is reasoned as being caused by the ability of teratogens to be 'ergic' to cortisone, ACTH or insulin, all of which, when administered, are reliable damagers of embryos and reducers of amniotic fluid volume. Besides this influence on permeability, the author notes a number of other responses induced by both the agents and the hormones, including a reduction in the number of circulating neutrophils."

54. Charles, David, and Finland, Maxwell, eds.: *Obstetric and Perinatal Infections*. Philadelphia: Lea & Febiger, 1973. 632 pp.

This book contains 28 contributions by physicians from various medical specialities concerning infections that may afflict the mother, the fetus, and the infant. A bibliography follows each contribution.

55. Chase, H. Peter; Marlow, Robert A.; Dabiere, Carol S.; and Welch, N. Noreen: "Hypoglycemia and Brain Development," *Pediatrics*, 52:513-520, October, 1973.

Previous research into the changes found in the nervous system following hypoglycemia is reviewed. A study was undertaken to determine the biochemical alterations which occur in the brain when hypoglycemia is induced. Hypoglycemia was induced once each day for 18 days in infant rats as described. Findings indicated that brain weight, cellularity, and protein content were reduced throughout the brain. Also, "the myelin lipids, cerebroside and sulfatide, were reduced in concentration or total quantity to a greater extent than other lipids." "Brain glucose concentrations were markedly lowered." Results are discussed, and it is speculated that similar alterations may also occur in the human infant secondary to hypoglycemia.

56. Chase, Helen C., ed.: "A Study of Risks, Medical Care, and Infant Mortality," *American Journal of Public Health*, Volume 63 Supplement, September, 1973. 56 pp.

Contained in this Supplement are the 4 papers, dealing with the above Study, that were presented at the 100th Annual Meeting of the American Public Health Association held in Atlantic City in November, 1972. The Study was conducted by the Institute of Medicine, National Academy of Sciences, and the New York City Department of Health and used the vital records of New York City for 1968 to form a cohort of births. These births were studied to determine their risks, the characteristics of the maternal prenatal care received, and the infant outcome. After the "Highlights of the Report" are described, the 4 papers are presented. Their titles are "Selected Substantive Results," "Ethnic Group, Education of Mother, and Birth Weight," "Education of Mother, Medical Care, and Condition of Infant," and "Methodological Considerations."

57. Chisolm, J. Julian, Jr.: "Management of Increased Lead Absorption and Lead Poisoning in Children," *New England Journal of Medicine*, 289:1016-1018, November 8, 1973.

"At least 24 per cent of young children with acute lead encephalopathy or recurrent but less severe clinical bouts of plumbism sustain permanent injury to the nervous system." Treatment before the onset of symptoms is discussed in cases when the child presents with >80 µg of lead per 100 ml of whole blood and in cases of 50 to 80 µg per 100 ml of whole blood. Long-term management must also be considered including the destroying of environmental hazards. Methods used in the Department of Pediatrics at Baltimore City Hospitals are described, and a case report is presented to show problems involved.

58. Chisolm, J. Julian, Jr.: "Screening for Lead Poisoning in Children," *Pediatrics*, 51: 280-283, February, 1973.

Recent progress in this area is described.

59. Chisolm, J. Julian, Jr.: "The Continuing Hazard of Lead Poisoning," *Hospital Practice*, 8:127-135, November, 1973.

The subject is introduced by stressing the importance of therapy before the onset of symptoms. The ordinary intake and disposition of lead in the body of the adult and the child is then discussed. The effects of lead toxicity are explained, including the metabolic consequences of increased lead absorption, renal injury, and CNS damage.

Also described are the diagnostic difficulties involved, the "triad of causal factors" that is often present, the need for serial measurements of blood-lead concentration in order to detect trends, and the need for defining possible environmental lead exposure sources. Then considered are "the options available in testing for excessive lead exposure in relation to current efforts to detect and treat children at risk." "The goals must be therapeutic intervention before the onset of clinically recognizable signs and symptoms, and prevention."

60. Chow, Paula J., and Ackerman, Bruce D.: "Perinatal Acidosis and Placental Transfusion," *Acta Paediatrica Scandinavica*, 62:417-422, July, 1973.

In order to further study "the effect of fetal asphyxia on the distribution of blood volume between the placenta and fetus," umbilical arterial blood samples were obtained from 75 full-term, vaginally born infants. Umbilical artery pH and residual placental blood volume (RPBV) were determined. Of the 75 mothers, 36 were primiparous and 39 were multiparous. A significant relationship was found between fetal acidosis and RPBV in the infants of the multiparous mothers, but no such relationship was present in the infants of the primiparous mothers. These findings are discussed and related to results of other studies.

61. Chyatte, Samuel B., and Basmajian, John V.: "Dantrolene Sodium: Long-Term Effects in Severe Spasticity," *Archives of Physical Medicine and Rehabilitation*, 54:311-315, July, 1973.

Reported are the results of using dantrolene sodium, a skeletal-muscle relaxant, in double-blind studies involving 30 patients with neurological disorders. The patients ranged in age from 7 to 62 years. In all cases the drug therapy was continued for 6 months or more. The patients, the dosage, and the side effects are described as are problems encountered in evaluation and research methods used. In 9 of the 30 cases dantrolene sodium treatment was discontinued after 6 to 9 months, "for the most part because the degree of improvement seemed insufficient." "In the 21 who had received the drug for a year or more at the time of this report, the degree of improvement (marked or moderate, in all 21) was maintained at the level achieved during the initial double-blind study, as estimated by subjective responses, objective tests and performance in activities of daily living (ADL). More than 90% of patients showed some reduction in spasticity during treatment with the drug." The results with multiple sclerosis and athetoid patients was felt to be especially encouraging.

62. Chyatte, Samuel B.; Birdsong, Jackson H.; and Roberson, Donald L.: "Dantrolene Sodium in Athetoid Cerebral Palsy," *Archives of Physical Medicine and Rehabilitation*, 54: 365-368, August, 1973.

Dantrolene sodium, a skeletal-muscle relaxant, was administered to 17 athetoid cerebral palsied patients, who ranged in age from 7 to 38 years, in a double-blind study. No other treatment had been effective for spasticity relief in any of these patients. The plan of and procedures used in this study are described as are the objective and subjective results, the side effects, and the dosage used. Side effects were seen to be "minimal and reversible." "More than half the patients showed improvement, and eight have continued the drug therapy for more than one year with gratifying results."

63. Clavero, José A.; Negueruela, Juan; Ortiz, Luis; de los Heros, Juan A.; and Modrego, Severino P.: "Blood Flow in the Intervillous Space and Fetal Blood Flow. I. Normal Values in Human Pregnancies at Term," *American Journal of Obstetrics and Gynecology*, 116:340-346, June 1, 1973.

Previous research in the area is reviewed. Using echography to locate the intervillous space, the isotope, xenon (^{133}Xe), was injected in 23 patients, having normal pregnancies as defined, in order to study the intervillous space circulation. Methods are described. The normal range of values for the intervillous space flow and for the fetal flow were established with the mathematical methods explained. A good correlation was found between the 2 flows. "The analysis of our results makes it clear that there exists a relationship between the blood flow in the intervillous space and the fetal blood flow. They both appear to rise and fall in a parallel fashion independent of fetal weight and duration of pregnancy. As will be seen in our next report, the changes in fetal and placental blood flow are in strict correlation with the condition of the placenta."

64. Clavero, José A.; Ortiz, Luis; de los Heros, Juan A.; and Negueruela, Juan: "Blood Flow in the Intervillous Space and Fetal Blood Flow. II. Relation to Placental Histology and Histometry in Cases With and Without High Fetal Risk," *American Journal of Obstetrics and Gynecology*, 116:1157-1162, August 15, 1973.

Studied were the 23 cases of normal pregnancy described in Part I of this report and 21 additional cases who were classified as being at high fetal risk because fetal distress that was attributable to placental abnormalities developed during labor. The criteria for this classification are outlined. Regarding the 21 cases of fetal distress, the values of the blood flows in both the intervillous space and the fetus were found to fall "outside the limits of reliability of the straight line regression calculated for the 23 normal cases." The placentas were studied histologically and morphometrically in 11 cases with fetal distress and 15 normal cases, and the placentas were classified as being mature, hypermature, or senescent, as explained. "Cases of fetal distress were usually associated with hypermature and senescent placentas that have abnormal blood flows." Results are discussed.

65. Cockburn, F.; Brown, J.K.; Belton, N.R.; and Forfar, J.O.: "Neonatal Convulsions Associated With Primary Disturbance of Calcium, Phosphorus, and Magnesium Metabolism," *Archives of Disease in Childhood*, 48:99-108, February, 1973.

Studied were 75 newborns who had suffered "convulsions considered to be due primarily to disordered calcium, phosphorus, or magnesium metabolism." The infants are described as are the biochemical and clinical findings, including the convulsion pattern and characteristics, the neurological examination results, treatment and its results, and follow-up studies. Eighty-five percent of the infants were considered to be normal at follow-up and "none of the affected infants had a significant degree of handicap." The prognosis in infants suffering convulsions due to this cause is considered to be good.

66. Cohen, Carol J.; Bowers, George N.; and Lepow, Martha L.: "Epidemiology of Lead Poisoning; A Comparison Between Urban and Rural Children," *Journal of the American Medical Association*, 226:1430-1433, December 17, 1973.

Compared with regard to blood lead levels were 230 rural and 272 urban children ages 1 to 5 years. Data from a questionnaire are presented as are laboratory results and

findings from environmental samples. The mean blood lead level was found to be significantly lower in the rural group (22.8 µg/100 ml) than in the urban children (32.7 µg/100 ml). Findings indicated 'undue lead absorption' in 9% of the rural group and 23% of the urban group. "In all cases of elevated lead levels in rural children, the presence of leaded paint on accessible surfaces was documented." Other possible sources in the urban population, such as airborne lead, are discussed.

67. Cohen, Herman; Graham, Henry; and Lau, H. Lorrin: "Alpha-1 Fetoprotein in Pregnancy," *American Journal of Obstetrics and Gynecology*, 115:881-883, April 1, 1973.

Described are the methods and results of using a simple screening test which utilizes counterimmunoelectrophoresis (CIEP) to assay alpha-1 fetoprotein (AFP). Sera from 298 pregnant women obtained prior to term were studied. Some 291 of these samples contained less than 250 ng AFP/ml. All 7 patients who had sera containing over 250 ng AFP/ml "were associated with either fetal morbidity or fetal death." Clinical data are presented for these 7 cases.

68. Cohen, M.; Haour, F.; Dumont, M.; and Bertrand, J.: "Prognostic Value of Human Chorionic Somatomammotropin Plasma Levels in Diabetic Patients," *American Journal of Obstetrics and Gynecology*, 115:202-210, January 15, 1973.

Radioimmunoassay was used to serially measure the levels of human chorionic somatomammotropin (HCS) in the plasma of 24 pregnant diabetic women. Detailed methods are explained. These women were divided into 3 groups on the basis of their plasma HCS levels. In the group in which the diabetes was complicated by hypertension, the HCS levels were found to be significantly lower than normal. In the group of diabetic women who had pregnancies that were free of complications, the HCS levels were found to be within the normal range. In the group of women who experienced diabetic instability, as described, during their pregnancies, the HCS levels after 33 weeks were found to be significantly above normal, with 1 exception. The outcome of pregnancy in these 24 women is also described and discussed in relation to their plasma HCS levels. It is concluded that the plasma HCS levels of pregnant diabetic women "are expressions of complications arising during pregnancy."

69. "A Common Childhood Disease With a Vengeance - For a Fetus," *Medical World News*, 14: 84D-84E, April 13, 1973.

Studies and case reports of the teratogenic effects of maternal chickenpox (the varicella-zoster virus) on the fetus in early pregnancy are presented.

70. Connolly, Kevin, ed.: *Mechanisms of Motor Skill Development*. New York: Academic Press, 1970. 393 pp.

The contents of this volume are based on the proceedings of a multi-disciplinary Study Group on Mechanisms of Motor Skill Development held at the Ciba Foundation in London in November, 1968. Articles were presented and discussions were held in the following subject areas: "Reflex Mechanisms," "Infancy: the Emergence of Skill," "The Experimental Analysis of Skill," "Cognitive Factors in Skill Development," "Conditioning and Motor Control," "Animal Studies," and "Sensory-Motor Integration." An introduction and an evaluation are presented by the editor. Reference lists are included throughout.

71. Cree, Jean E.; Meyer, Joseph; and Hailey, David M.: "Diazepam in Labour: Its Metabolism and Effect on the Clinical Condition and Thermagonesis of the Newborn," *British Medical Journal*, 4:251-255, November 3, 1973.

Studied with regard to clinical condition, thermogenesis, and plasma level analysis were the following 2 groups of neonates: Group 1 which contained 18 infants whose mothers had received 30 mg or less of diazepam in the 15 hours prior to delivery, and Group 2 which contained 14 infants whose mothers had received more than 30 mg of diazepam in the 15 hours prior to delivery. In Group 1, 12 of the mothers had mild pre-eclampsia, and in Group 2, 13 of the mothers had pre-eclampsia. Methods of assessment, testing and analysis are explained. The Group 1 infants were found to have had little adverse effect from the diazepam. However, "low Apgar scores at birth, apnoeic spells, hypotonia, reluctance to feed, and an impaired metabolic response to a cold stress" were found in various of the 14 infants in Group 2. "Measurement of plasma levels of diazepam and its active metabolite showed that both products were detectable in significant concentration in some infants for up to eight days." Results are discussed, and conclusions are presented. "We conclude that greater care should be taken in the use of this otherwise effective drug for the treatment of pre-eclampsia."

72. Cummings, Victor, and Kutner, Bernard: "The Rehabmobile: A Mobile Rehabilitation Clinic in an Urban Ghetto Area," *Archives of Physical Medicine and Rehabilitation*, 54:19-24, January, 1973.

Described is the operation and the results of operating such a facility for a 9-month period. The Rehabmobile was designed to provide rehabilitation services to physically handicapped people living in the urban ghetto area of South Bronx, New York City. Some 24% of the patients seen during the 9-month study period were in the 1-10 year age group. The diagnoses, disabilities, modes of patient transportation to the vehicle, services performed by the various professional disciplines represented in the vehicle, costs, and attitudes of the patients toward the service are among the factors reported.

73. Curzen, Peter, and Varma, Rashmi: "A Comparison of Serum Cystine Aminopeptidase and Urinary Estrogen Excretion as Placental Function Tests," *American Journal of Obstetrics and Gynecology*, 115:929-932, April 1, 1973.

In order to make such a comparison, values were serially obtained as described from 105 patients who were having complicated pregnancies. The normal range of serum cystine aminopeptidase (CAP) was also determined from serial assays on 50 normal pregnant women. There was a wide scatter of results with the CAP values showing a progressive increase from the second trimester onward in normal pregnancy. Regarding the 105 complicated pregnancies, "serum CAP determinations were found to be of no use in predicting fetal distress, the Apgar score at birth, or the 'light-for-dates' baby." "Serial assays of urinary estrogen output enabled the 'light-for-dates' infant to be correctly predicted in 70 per cent of cases but there was also an incidence of 20 per cent false-positive predictions."

74. Daels, José: "Microwave Heating of the Uterine Wall During Parturition," *Obstetrics and Gynecology*, 42:76-79, July, 1973.

Such treatment was administered at the moment of contraction to 1,000 obstetric patients. Methods are described. Findings indicated that microwave heating of the uterine wall generally had an analgesic effect, significantly shortened the average duration of the dilation period as compared to 1,000 untreated patients, caused no adverse effects, and produced significantly improved Apgar scores in the cases so treated as compared to the 1,000 untreated cases.

75. Dahms, Beverly Barrett; Krauss, Alfred N.; Gartner, Lawrence M.; Klain, David B.; Soodalter, Jane; and Auld, Peter A.M.: "Breast Feeding and Serum Bilirubin Values During the First 4 Days of Life," *Journal of Pediatrics*, 83:1049-1054, December, 1973.

In this described study of 199 bottle and breast fed neonates, no relationship was found between breast feeding and increased serum bilirubin levels. However, there was an 8% mean weight loss in those newborns who were breast fed without supplements, while all other infants had a 4% mean weight loss. There was no relation between weight loss and hyperbilirubinemia.

76. Davies, D.P.; Gomersall, R.; Robertson, R.; Gray, O.P.; and Turnbull, A.C.: "Neonatal Jaundice and Maternal Oxytocin Infusion," *British Medical Journal*, 3:476-477, September 1, 1973.

Seventy-eight healthy, full-term neonates were placed in 1 of the 3 following groups: Group A consisted of 28 infants whose mothers had had spontaneous onset of labor and received no oxytocic drugs, Group B contained 14 infants whose mothers had had spontaneous onset of labor but had been given oxytocin to expedite labor, and Group C consisted of 36 infants whose mothers had had labor "artificially induced by amniotomy followed immediately by intravenous oxytocin infusion." Total serum bilirubin levels were determined for these infants on days 2 and 5 of life. On both of these days, the Group C infants were found to have significantly higher mean total bilirubin levels than did the Group A infants. The levels of the Group B infants did not differ significantly from the levels of the Group A infants. Findings are discussed and possible explanations for the results are offered. "Though these findings suggest a dose dependent effect of oxytocin, other possible explanations are suggested which take into account other drugs administered to the mother and also differences in the corticosteroid status of the groups of infants."

77. Davison, J.M.; Lind T.; Farr, V.; and Whittingham, T.A.: "The Limitations of Ultrasonic Fetal Cephalometry," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:769-775, September, 1973.

Three sources of error that are possible when estimating the fetal biparietal diameter by fetal ultrasonic cephalometry are examined in a study that was conducted under "blind conditions." The equipment used, the design of the study, and the study patients are described as are the results. The 3 sources of possible error are discussed in detail, and conclusions are presented. "We conclude that these sources of error have been sufficiently appreciated in the past and while it is possible to determine the growth rate of the fetal skull the time interval necessary to measure

this with a clinically realistic degree of confidence is not less than three weeks. If ultrasound methods of measurement are to find a place in clinical practice the techniques need to be more stringently appraised." In an appendix are defined some statistical terms used.

78. Daw, Edward: "Fetography," *American Journal of Obstetrics and Gynecology*, 115:718-721, March 1, 1973.

The "versatile diagnostic procedure of outlining the fetus radiographically" is described, and its specific uses are listed and explained. They include the localization of the fetus for sampling or for intrauterine transfusion, the estimation of fetal maturity, the investigation of polyhydramnios, the investigation of unusual fetal positions, the displaying of soft tissue abnormalities, the demonstration of fetal foregut atresia, the detection of fetal distress, the detection of fetal death, the recognition of fetal edema and ascites, and the disclosure of mutiple pregnancy (monoamniotic and conjoined twins. Complications are considered.

79. de Alvarez, Russell R.: "Hypertensive Disorders in Pregnancy," *Clinical Obstetrics and Gynecology*, 16:47-71, March, 1973.

Included among the facets discussed are the diagnostic criteria for hypertension, the classification of hypertensive disorders in pregnancy, incidence, etiology, pathogenesis, pathology, clinical findings, complications, differential diagnosis, prophylaxis, treatment, and prognosis.

80. DeCastro, Aurora Fernandez; Usategui-Gomez, Magdalena; and Spellacy, William N.: "Amniotic Fluid Amylase," *American Journal of Obstetrics and Gynecology*, 116:931-936, August 1, 1973.

Current methods of estimating fetal maturity are reviewed. In order to determine if amylase levels in amniotic fluid could indicate fetal maturity, amniotic fluid samples were obtained from 187 patients. These cases and methods are described. Single determinations were conducted in 180 cases and repetitive determinations in 7 cases. An amylase level of 200 I.U. per liter or greater was found to correlate well with a mature fetus. "However, values less than 200 I.U. per liter are associated with both mature and immature infants." These and other results are discussed.

81. DeHertogh, R.; Thomas, K.; Hoet, J.J.; and Ekka, E.: "Plasma Levels of Unconjugated Estrogens in Normal and Diabetic Pregnancies," *American Journal of Obstetrics and Gynecology*, 117:1076-1079, December 15, 1973.

When the plasma concentration of unconjugated estrogen was measured by radioimmunoassay in 93 samples from 14 pregnant diabetic patients and compared with 287 samples from 215 normal pregnant patients, the concentrations were found to be similar in both groups at comparable periods of gestation. "These results suggest that the concentration of plasma estradiol, which is the main estrogen measured by this technique, is not altered in compensated diabetic pregnancy." In one diabetic patient the plasma estrogen concentration remained unchanged while the urinary estriol determination fell precipitously. This case suggests "that further evaluation is required before plasma estrogen assays may be accepted for clinical management."

82. DeSouza, S.W., and Adlard, B.P.F.: "Growth of Suckling Rats After Treatment With Dexamethasone or Cortisol; Implications for Steroid Therapy in Human Infants," *Archives of Disease in Childhood*, 48:519-522, July, 1973.

A single dose of dexamethasone, either 1 mg/kg (7 litters) or 20 mg/kg (5 litters), was administered to 1 of a pair of 4-5 day-old rats. The other pair received glucose. At both of the doses there was a marked reduction in subsequent growth of the body, brain, and thymus. When cortisol was administered in a similar manner to other rats, there occurred "smaller but similar effects." These findings are discussed in relation to the use of glucocorticord therapy in human infants. "It is clear that administered stercids have a profound and deleterious effect on growth, including that of the brain. This must be carefully borne in mind when their use is being considered in the newborn baby."

83. Dobbing, John, and Sands, Jean: "Quantitative Growth and Development of Human Brain," *Archives of Disease in Childhood*, 48:757-767, October, 1973.

Studied quantitatively regarding the human brain growth spurt were 139 human brains, ranging from age 10 weeks' gestation to age 7 years, plus 9 adult brains. Methods of selection and analysis are described. Results are presented in numerous graphs regarding data on body weight in relation to brain weight, the cellularity and total cell number, the development of neurons and glia, myelination, the water content, and the relative growth of brain regions. The growth spurt period of the human brain was found to be "much more postnatal than has formerly been supposed." "The cerebellum has special growth characteristics; and there is a separate period from 10 to 18 weeks' gestation when adult neuronal cell number may largely be achieved." Findings are discussed in relation to the vulnerability of the developing brain.

84. Donahue, Charles L., Jr., and Wan, Thomas, T.H.: "Measuring Obstetric Risks of Prematurity: A Preliminary Analysis of Neonatal Death," *American Journal of Obstetrics and Gynecology*, 116:911-915, August 1, 1973.

In an effort to develop a method for identifying the risks of prematurity and neonatal death in obstetric patients, data from the records of 574 neonatal deaths and 1,142 live births in Rhode Island were analyzed. Methods are described. "A binary multiple regression method was used with prematurity as the dependent variable. Nine independent risk variables were studied. Total Risk Scores were calculated for every woman in the study. This score was based on the probability values of the factors of the variables for each woman. The Total Risk Score proved to be a good predictor of neonatal mortality, especially for gravidity 2+ women." Difficulties involved in this research and future research needs are discussed.

85. Donald, I.R.; Freeman, R.K.; Goebelsmann, U.; Chan, W.H.; and Nakamura, R.M.: "Clinical Experience With the Amniotic Fluid Lecithin/Sphingomyelin Ratio," *American Journal of Obstetrics and Gynecology*, 115:547-552, February 15, 1973.

In this retrospective study, 607 amniotic fluid samples were obtained from 425 patients during the last trimester of pregnancy, and lecithin/sphingomyelin (L/S) ratios were determined. These ratios were then correlated with neonatal pulmonary performance. The terms, idiopathic respiratory distress syndrome (RDS) and hyaline membrane disease (HMD), are defined as they were used in this study. Data was also

obtained on maternoplacental disease, gestational age estimation, birth weight, Apgar score, etc. Among 347 neonates having an L/S ratio of 2.0 or greater, there was a 3.7% morbidity rate from idiopathic RDS and a 0.3% mortality rate from HMD. Among 48 neonates having an L/S ratio of less than 2.0 within 72 hours of delivery, there was a 63% morbidity rate from RDS and a 23% mortality rate from HMD. Other findings are reported and discussed. "The association of an L/S ratio greater than 2.0 with a low incidence of RDS and virtual absence of HMD substantiates the value of this method as a predictor of fetal pulmonary maturity."

86. Douglas, C.P., and Holt, K.S., eds.: *Mental Retardation: Prenatal Diagnosis and Infant Assessment.* London: Butterworth, 1972. 64 pp.

The proceedings of 2 symposia are presented here. They are Symposia 6 and 8 which were held at the Middlesex Hospital Medical School in June, 1970 and March, 1971, respectively, under the auspices of the Institute for Research into Mental Retardation, London. Symposium 6 is entitled, "Prenatal Diagnoses." Contributions were presented on the "Antenatal Detection of Chromosomal and Metabolic Abnormalities," "The Environment in Prenatal Diagnoses," and "Fetal Audiometry: Tests in Sensory Function in the Fetus." Symposium 8 is entitled, "The Reliability of Methods of Assessment of the Infant." Contributions were presented on the "Predictive Value of Developmental Assessment in Infancy" and the "Strategy and Validity of Early Detection of Neurological Dysfunction." Summaries of the discussions held are included after both Symposia.

87. Drash, Philip W., and Leibowitz, J. Michael: "Operant Conditioning of Speech and Language in the Nonverbal Child," *Pediatric Clinics of North America*, 20:233-243, February, 1973.

Considered in this article are the recent developments that have been made in the operant treatment of young verbally deficient children. The identification and referral process for such a child, the "behavioral evaluation of language development," the operant conditioning program of treatment, the results of such treatment, and the "effects of treatment on general cognitive development" are described.

88. Dubin, Norman H.; Crystle, C. Deans; Grannis, George F.; and Townsley, John D.: "Comparison of Maternal Serum Estriol and Urinary Estrogen Determinations as Indices of Fetal Health," *American Journal of Obstetrics and Gynecology*, 115:835-841, March 15, 1973.

In order to determine the relationship between serial estriol (SE_3) levels, 24 hour urinary estrogen (UE) excretion, and the estrogen/creatinine (E/C) ratio in normal pregnancies and to determine the usefulness of these parameters in monitoring complicated pregnancies, serial values of each were obtained during the last trimester from 20 women having normal pregnancies and from 31 women having described complications of pregnancy. Normal ranges of each parameter were established using the samples from the normal patients. "Significant correlations ($p < 0.001$) were found between SE_3 and UE ($r=0.56$), SE_3 and E/C ($r=0.63$), and UE and E/C ($r=0.88$)." Findings regarding the complicated pregnancies are presented by grouping the women according to those in whom the serum estriol and E/C ratio were both low, those who either had low serum estriol levels or low E/C ratio, and those whose serum estriol and E/C

ratio were normal or high. "Seven of eight pregnancies, where all parameters were low, ended with delivery of compromised infants." The difficulties involved in using these parameters to monitor high-risk pregnancies are discussed. "In most high-risk pregnancies, serial 24 hour UE, E/C, and total creatinine excretion provide adequate data to monitor estrogen metabolism as one parameter of fetal health."

89. Dubowitz, Victor: *The Floppy Infant*. London: Spastics International Medical Publications in association with Heinemann Medical Books, 1969. 109 pp.

After the floppy infant is described and the pertinent literature is reviewed, "a practical approach to the diagnosis and classification of the floppy infant" is presented. This classification system divides floppy infants into 2 categories: those having paralytic disorders and muscular weakness with incidental hypotonia and those having non-paralytic disorders and hypotonia without significant weakness. Each of these 2 types are subdivided and described with case histories in separate chapters. Diagnostic procedures and the management of these children are also considered in individual chapters. A bibliography is included.

90. Duhring, John L.; McKean, Harlley E.; and Greene, John W., Jr.: "Diurnal Variation of Estriol Excretion in Human Pregnancy," *American Journal of Obstetrics and Gynecology*, 115:875-880, April 1, 1973.

In an attempt to identify a diurnal variation in urinary estriol excretion and thereby simplify the monitoring necessary to predict fetal status using the method of determining maternal urinary estriol excretion, the urinary output of 21 hospitalized women having normal pregnancies was fractionated into 4 hour aliquots for 6 days. The estriol level was determined in duplicate for each individual specimen and for a 24 hour specimen, obtained from the others. Much statistical analysis was conducted with results presented in the areas of assay precision, diurnal variation, and prediction. It was not possible to predict the 24 hour urinary estriol excretion level from 1 or even 2 4 hour specimens because of the large variability in normal diurnal variation. "While diurnal variation clearly exists, it is extremely complex and not simply predictable for a given patient." For the last 3 days of the 6 day study period the patients were maintained on total bed rest. This treatment was found to have "no significant influence on urinary estriol excretion rates."

91. Dunn, Leo J., and Bhatnagar, Ajay S.: "Use of Lecithin/Sphingomyelin Ratio in the Management of the Problem Obstetric Patient," *American Journal of Obstetrics and Gynecology*, 115:687-696, March 1, 1973.

Amniotic fluid samples were obtained from 96 high-risk obstetric patients and the visual lecithin/sphingomyelin (L/S) ratio was determined as described. In 57 of these cases the molar L/S ratio was also determined. A total of 42 women had premature rupture of membranes, 20 had hypertensive disorders, 11 had repeat cesarean section, 10 had diabetes, and 13 had other complications. The results of the visual L/S ratio determination, the molar L/S ratio determination, the gestational age, sex, fetal weight, and respiratory status are presented in charts by category of complication. Using the visual method, 70 fetuses were considered to have a mature L/S ratio, and only 1 of these developed a mild respiratory distress syndrome. Thus, the visual determination of the L/S ratio was considered to be useful in the prediction of expected neonatal pulmonary function. Further discussion by other physicians is conducted following the text.

92. Dweck, Harry S.; Saxon, Samuel A.; Benton, John W.; and Cassady, George: "Early Development of the Tiny Premature Infant," *American Journal of Diseases of Children*, 126:28-34, July, 1973.

Assessed were 14 children, ages 11 to 33 months who had had birth weights of from 960 to 1,100 gm (LBW group), and 14 age, sex, and race matched control children who had been healthy, mature neonates. Results are presented regarding prenatal characteristics, the postnatal course, physical development, neurological assessment, and intellectual development. Neurological examination indicated 11 children in both groups to be normal, 3 controls and 1 LBW child to be borderline, and 2 LBW children to have neurological deficits. Mean IQ scores and developmental scores were similar for both groups. The findings are discussed, other studies are described, and 4 possible explanations for disparate data from other studies are presented. "In contrast to the grim predictions of the past, these preliminary data suggest a more encouraging prognosis for the surviving tiny premature infant."

93. Ebbin, Allan J.; Wilson, Miriam G.; Chandor, Stebbins B.; and Wehrle, Paul F.: "Inadvertent Rubella Immunization in Pregnancy," *American Journal of Obstetrics and Gynecology*, 117:505-512, October 15, 1973.

Data is presented on 60 pregnancies in which the women were immunized within 90 days before or during pregnancy. The selection of the 60 cases and control cases as well as the methods of examination used are described. Findings are reported separately for the 9 cases in which rubella susceptibility was known before the immunization, the 51 cases in which the immune status of the women was unknown, and the control cases. "No definite statement can be made regarding the embryopathic potential of the rubella vaccine from these data."

94. Edwards, Maureen C.; Fletcher, Anne B.; and Avery, Gordon B.: "Experiences With the Infant Transport Van," *Clinical Proceedings of Children's Hospital National Medical Center*, 29:119-123, June, 1973.

Described is the Infant Transport System of the Children's Hospital of the District of Columbia. Results of its usage since February, 1972 are reported, and its impact and future are discussed. The System utilizes a specially equipped van containing trained personnel to transfer neonates from hospitals in the Washington area. "It is felt that infants arrive at CHDC earlier, warmer and in better general condition than by conventional transfer means."

95. Edwards, Neil K.; Atherton, Harry D.; Perlstein, Paul H.; and Sutherland, James M.: "Phantom Breathing in Monitored Infants," *American Journal of Diseases of Children*, 125:684-685, May, 1973.

Because it had been noted that some apnea electronic monitors had occasionally failed to alarm personnel when infants who were being monitored ceased to breathe, a study was conducted of the nursery's electrical distribution system and 5 randomly selected apnea monitors. It was found that outlet voltage fluctuations occurred and were capable of causing malfunctions in the apnea monitors. "This report suggests that specifications should be established for performance of monitoring equipment and that electrical outlet voltage should be carefully maintained within known limits in areas in which monitoring of critically ill patients is necessary."

96. Egan, D.F.; Illingworth, R.S.; and MacKeith, R.C.: *Developmental Screening 0-5 Years*. London: Spastics International Medical Publications in association with Heinemann Medical Books, 1969. 65 pp. (Clinics in Developmental Medicine, No. 30.)

This book contains descriptions with illustrations of "rapid successive screening developmental examinations," conducted at key ages between 0 and 5 years of age. The "general physical examination" is considered, followed by explanations and illustrations of the "inherent primitive and secondary responses in the first year." Then discussed in detail is "the developmental screening examination." The ages of 6 weeks, 6 months, 10 months, 18 months, 2 years, 3 years, and 4 1/2 years are considered individually with regard to the factors to be noted in the areas of gross motor performance, vision and fine manipulation, hearing and language, and everyday skills and social responses. At each age the findings which would indicate a need for referal to a specialist are listed.

97. Ehrlich, Carol H.; Shapiro, Esther; Kimball, Bud D.; and Huttner, Muriel: "Communication Skills in Five-Year-Old Children With High-Risk Neonatal Histories," *Journal of Speech and Hearing Research*, 16:522-529, September, 1973.

Eighty-one 5 year olds who had "one or more of the following high-risk histories: birth weight less than 2,500 grams; gestational age less than 38 weeks; SGA; Rh or ABO blood incompatibility; respiratory distress; and hyperbilirubinemia greater than 15 mg %" were tested regarding their speech, language, auditory and intellectual development on 29 described measures or observations. "Despite normal intelligence, 54% of the children needed special help. Respiratory distress or abnormal birth weight and gestational age led to the greatest incidence of disability." Detailed findings are presented as are implications.

98. Ekelund, Laila; Arvidson, Gosta; and Astedt, Birger: "Amniotic Fluid Lecithin and Its Fatty Acid Composition in Respiratory Distress Syndrome," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:912-917, October, 1973.

Recent research in the area is reviewed. Amniotic fluid phospholipids were analyzed at parturition in 9 infants who developed RDS and had gestational ages between 25 to 37 weeks, in 15 infants who did not develop RDS with a gestational age of 35 weeks, and in 80 infants who did not develop RDS and were full-term. Much data is presented. "The mean concentration of the total phospholipids and the lecithin/sphingomyelin ratio were significantly lower in the RDS group than in the other two groups with healthy infants. In the RDS group there was also a significantly lower proportion of palmitic acid in the amniotic fluid lecithins." These and other results are discussed and interpreted. "The present investigation clearly demonstrates that analysis of total amniotic fluid phospholipids should be of great value in estimating the pulmonary maturity of the fetus."

99. "Electronic Filter Clarifies Spastic Speech...and Alcohol Injections Calm Muscle Spasms," *Medical World News*, 14:22-23, February 9, 1973.

Two aids in the treatment of cerebral palsy are described here. The first is "a practical, low-cost electronic speech aid that filters, clarifies, and amplifies the voices of individuals such as cerebral palsy patients with speech disabilities." Use of the device by a 10 year old athetoid boy is reported as are the development of the aid by American Telephone & Telegraph Co. and the National Institute for Rehabilitation Engineering and the fitting procedure. The second aid is the intramuscular injection of alcohol in cerebral palsied children to decrease abnormal muscle activity. This decrease permits beneficial physical therapy to be performed and helps in diagnosis. Work in this area by Dr. Earnest B. Carpenter of the Medical College of Virginia is described.

100. Ellis, Errington: *The Physical Management of Developmental Disorders*. London: Spastics Society Medical Education and Information Unit in association with Heinemann Medical Books, 1967. 50 pp. (Clinics in Developmental Medicine, No. 26.)

"It is important to emphasise that this book approaches the problems of cerebral palsy from the view of physical medicine." "Developmental Paediatrics" and "Developmental Disorders" are discussed in Chapters I and II, respectively. Assessment is

the subject of Chapter III with the essentials of assessment, the assessment center, and the recording of the assessment considered. In Chapter IV the concepts of various experts concerning the treatment of cerebral palsy are reviewed, including the concepts of Phelps, Collis, Fay, and the Bobath's. "The Physical Treatment of Developmental Disorders" is the subject of Chapter V. Treatment is divided into 3 main, overlapping parts: "1) early physical treatment, 2) physical care and maintenance, 3) physical education." "Parents and Therapist" is the topic considered in Chapter VI. In Chapter VII are presented photographs with descriptions to demonstrate many of the specific ways the therapist treats the child with developmental disorders.

101. Eriksson, Margareta; Catz, Charlotte S.; and Yaffe, Sumner J.: "Drugs and Pregnancy," *Clinical Obstetrics and Gynecology*, 16:199-224, March, 1973.

The basic principles of teratology are reviewed, and the components involved in the administration of drugs during pregnancy are discussed as they relate to and effect the mother, the placenta, the fetus, and the neonate. Also presented is a survey of the various "drugs currently used for the treatment of pregnant women."

102. Ermocilla, Rufino, and Altshuler, Geoffrey: "The Origin of 'X Cells' of the Human Placenta and Their Possible Relationship to Intrauterine Growth Retardation: An Enigma," *American Journal of Obstetrics and Gynecology*, 117:1137-1140, December 15, 1973.

In a study on the origin of X cells in the human placenta involving 20 placentas of various gestational ages and associated with both male and female infants, 3 placentas from cases of intrauterine growth retardation were examined. "A severe proliferation of X cells" was noted in each of these 3 cases. Regarding the origin of the X cells, "in all of the placentas associated with male infants, X cells included fluorescent bodies typical of male sex chromatin." "This finding suggests that X cells may be of fetal origin but not necessarily exclusively so."

103. Essex, Nina L.; Pyke, D.A.; Watkins, P.J.; Brudenell, J.M.; and Gamsu, H.R.: "Diabetic Pregnancy," *British Medical Journal*, 4:89-93, October 13, 1973.

The management of diabetic pregnancy at King's College Hospital, London is explained including the control of the diabetes in obstetric patients, the obstetric management, delivery, and the care of the infant. The improvement in results with these patients is seen to be due to "1) scrupulous control of the diabetes 2) careful timing of delivery and 3) intensive care of the baby during and after labour."

104. "Exchange Transfusion Versus RDS," *Medical World News*, 14:15-16, June 8, 1973.

The work by Dr. Maria Delivoria-Papadopoulos and associates at the University of Pennsylvania Children's Hospital in Philadelphia on the early use of exchange transfusion on low birth weight infants and babies with RDS is described.

105. Fairweather, D.V.I., and Eskes, T.K.A.B., eds.: *Amniotic Fluid; Research and Clinical Application.* Amsterdam: Excerpta Medica, 1973. 343 pp.

Contained in this monograph are 17 articles by many international contributors. The aim of the book is to provide in 1 volume "an up-to-date and comprehensive collection of most of the known aspects of research studies on the liquor amnii and their clinical application." Many aspects of amniotic fluid are considered in the individual articles, including its origin, techniques of assessment, its components, and its clinical uses and value.

106. Falconer, G.F.; Hodge, J.S.; and Gadd, R.L.: "Influence of Amniotic Fluid Volume on Lecithin Estimation in Prediction of Respiratory Distress," *British Medical Journal*, 2:689-691, June 23, 1973.

Obtained from 82 described obstetric patients were 100 samples of amniotic fluid. Liquor volume and lecithin concentration were estimated; thus, the total quantity of lecithin in the amniotic fluid could be calculated. The findings confirm that a lecithin concentration below 3.5 mg/100 ml usually indicates a likelihood of developing RDS. However, in borderline cases, it was felt that the total amount of lecithin in the amniotic fluid had more prognostic value than did the lecithin concentration.

107. Fedrick, Jean: "Epilepsy and Pregnancy: A Report From the Oxford Record Linkage Study," *British Medical Journal*, 2:442-448, May 26, 1973.

Previous research is reviewed. The Oxford Record Linkage Study and the methods used in the described study are explained, as is the process of selecting a control group. A total of 223 infants who were delivered to 168 epileptic mothers from 218 pregnancies were identified. These cases were compared with those in the control series, and findings are reported regarding maternal age, parity, social class, stillbirths, livebirths, neonatal morbidity, congenital abnormalities, drug therapy, the onset of epilepsy, and the number of fits. The incidence of congenital abnormalities among the infants of epileptic mothers was found to be significantly higher (13.8% of livebirths) than among the controls (5.6%). "It was shown that neither the frequency with which the mother had fits nor the length of time she had had the epilepsy seemed to bear any relation to the frequency of defects in the offspring - with the exception of the two mothers who developed epilepsy in the first trimester or pregnancy - both of whose infants had major abnormalities." The results regarding the maternal use of anticonvulsant drugs strongly suggested "that anticonvulsant drugs have a substantial teratogenic effect," especially when phenobarbitone was used in combination with phenytoin. Findings are discussed.

108. Feldman, Robert G.; Haddow, James; Kopito, Louis; and Schwachman, Harry: "Altered Peripheral Nerve Conduction Velocity," *American Journal of Diseases of Children*, 125:39-41, January, 1973.

Motor nerve conduction velocities were determined as described in 27 control children and in 24 children with known plumbism. This latter group was found to have significantly lower mean motor nerve conduction velocities than did the normal children. "This finding may provide a valuable test for discovering minimal peripheral neurotoxic effects of chronic exposure to lead ingestion."

109. Fiser, Robert H., Jr.; Erenberg, Allen; Fisher, Delbert A.; and Oh, William: "Blood Gas and pH Changes During Glucose Infusion in the Fetal Sheep," *American Journal of Obstetrics and Gynecology*, 115:942-945, April 1, 1973.

When catheters were placed in 8 fetal sheep as described and glucose was constantly infused over a two-hour period in utero, there was "a significant improvement in fetal blood gases and pH." When an acute injection of glucose was administered under the same experimental conditions to 8 fetal sheep, "similar changes were not observed." Doses and methods are described, and the findings are discussed. "These results may be explained on the basis of improved circulatory and perfusion status of the fetal-placental unit when a sustained increase in fetal blood glucose level was achieved by constant glucose infusion."

110. Fitzhardinge, P.M., and Ramsay, M.: "The Improving Outlook for the Small Prematurely Born Infant," *Developmental Medicine and Child Neurology*, 15:447-459, August, 1973.

Studied prospectively for a minimum of 5 years were 32 prematurely born infants who weighed less than 1,251 g at birth. All were appropriate in weight for gestational age. The care of these infants and the follow-up procedures are described. Results are presented with regard to the neonatal course of the babies, their subsequent general health, their growth, vision, hearing, speech, CNS deficits, and intellectual functioning. There were 2 children who had major neurological abnormalities with minimal brain dysfunction being diagnosed in 9 other children. "The mean IQ was 88 for the boys and 92 for the girls. Perceptuo-motor difficulties were diagnosed in 10 children, seven of whom were doing poorly in school." The results are compared to those of previous studies, and several encouraging findings are noted. "The most dramatic change has been the reduction in the incidence of major neurological abnormalities," but "intellectual ability as expressed by IQ scores and school achievement were not so encouraging."

111. Florman, Alfred L.; Gershon, Anne A.; Blackett, Piers R.; and Nahmias, Andre J.: "Intrauterine Infection With Herpes Simplex Virus," *Journal of the American Medical Association*, 225:129-132, July 9, 1973.

A case report of an infant is presented in detail to illustrate the potential of herpes simplex virus to cause severe abnormalities. "When our findings are added to those of the five similar instances known to us, it seems reasonable to include this virus among intrauterine infective agents that may cause such congenital malformation as diffuse brain damage, mental retardation, microcephaly, intracranial calcifications, microophthalmia, retinal dysplasia, and chorioretinitis."

112. Ford, Frank R.: *Diseases of the Nervous System in Infancy, Childhood and Adolescence*. 6th ed. Springfield, Ill.: C.C. Thomas, 1973. 1557 pp.

The text of this large volume is presented in 11 chapters, with the first entitled, "Prenatal Diseases and Developmental Defects of the Nervous System," probably being the most pertinent to this bibliography. Other disorders of the nervous system discussed include heredofamilial and degenerative diseases, conditions involving "infections and parasitic invasions of the nervous system," intoxications of the nervous system, metabolic and endocrine disorders, "vascular lesions and circulatory disorders of the nervous system," neoplasms, injuries to the nervous system, the epilepsies, "diseases of the autonomic system," "diseases of the muscles," and psychogenic dirorders. There is a lengthy Table of Contents and 2 indexes. Bibliographies are very prevalent throughout.

113. Fox, Lawrence A.: "Preventive Dentistry for the Handicapped Child," *Pediatric Clinics of North America*, 20:245-258, February, 1973.

The types and causes of dental disease are reviewed, and preventive dentistry for the handicapped child, including the role of nutrition, is discussed.

114. Franciosi, Ralph A.; Knostman, James D.; and Zimmerman, Robert A.: "Group B Streptococcal Neonatal and Infant Infections," *Journal of Pediatrics*, 80:707-718, April, 1973.

Reported are the methods and results of a group of epidemiologic and laboratory studies on group B streptococcal neonatal and infant infections which were conducted in Colorado from 1969 to 1971. The studies were conducted in an attempt "to determine: (1) the prevalance of group B in the vaginas of nonpregnant women and of pregnant women at the time of delivery, (2) the colonization rate of infants at delivery and after delivery, (3) the incidence and mortality rates of group B neonatal sepsis, (4) the role of adult males in the epidemiology of this disease, and (5) methods for an effective prevention program." Results are presented on 43 infant cases of group B detected during the study period. There were 2 distinct types of sepsis seen in these infants. "One type presented within hours of birth with respiratory distress, and the second presented as meningitis in the late neonatal period." Maternal evaluation and treatment and evaluation of the father for group B in the urethra are seen as principle methods of eradication and prevention.

115. Frank, Ulrich A.; Bordiuk, Joseph M.; Borromeo-McGrail, Virginia; Saltzman, Marcus B.; and Keitel, Hans G.: "Treatment of Apnea in Neonates With an Automated Monitor-Actuated Apnea Arrestor," *Pediatrics*, 51:878-883, May, 1973.

In an effort to develop such an arrestor, 11 possible visual, auditory, thermal, and mechanical methods of stimulating infants were developed and compared using 38 infants, in order to find the best form of stimulation for apneic infants. These 11 methods are described. The most effective method proved to be a balloon placed under the infant's neck. Rapid inflation and deflation of the balloon elicited a startle response in 94.2% of the 38 infants tested. This balloon was then attached to an automated respiration monitor. This combination was successful in terminating 99 of 105 apneic episodes in 4 low birth weight infants. These results are discussed. "To the extent that anoxia resulting from delayed recognition and treatment of apneic episodes causes neurologic damage, the use of monitoring and automatically actuated mechanical stimulation should improve prognosis in infants of low birth weight."

116. Freda, Vincent: "Hemolytic Disease," *Clinical Obstetrics and Gynecology*, 16:72-102, March, 1973.

Aspects considered include the techniques in antepartum management, the prevention of isoimmunization to the Rh factor, and ABO hemolytic disease. Many graphs and pictures are presented.

117. Friedman, Emanuel A.: "Patterns of Labor as Indicators of Risk," *Clinical Obstetrics and Gynecology*, 16:172-183, March, 1973.

A means of graphically analyzing and recording the stages and events in labor is explained, and a study concerned with the perinatal hazards of labor is reported.

118. Gabert, Harvey A., and Stenchever, Morton A.: "Continuous Electronic Monitoring of Fetal Heart Rate During Labor," *American Journal of Obstetrics and Gynecology*, 115: 919-923, April 1, 1973.

Electronic monitoring was conducted at the University of Utah Medical Center on 749 labors without regard to classification of pregnancy as high or low risk. Methods are described. The deceleration patterns in these cases are described as are cord problems. Interrelationships between deceleration patterns, small placentas, cord problems, and low Apgar scores were determined. "The perinatal mortality rate decreased from 29.49, in 1970, to 18.2 during the monitoring period. Neonatal deaths decreased by two thirds." It is felt that "the results obtained substantiate the concept that fetal electronic monitoring is both feasible and desirable for all labors."

119. Gabert, Harvey A., and Stenchever, Morton A.: "Effect of Ruptured Membranes on Fetal Heart Rate Patterns," *Obstetrics and Gynecology*, 41:279-282, February, 1973.

In order to determine the effect of ruptured membranes on fetal outcome, the fetal heart rate was studied in 749 patients, in 303 of whom the membranes had ruptured spontaneously. Methods are described. The findings indicated that "abnormal deceleration and low Apgar scores appear to be related to rupture of membranes only when other conditions are also present."

120. Gabert, Harvey A., and Stenchever, Morton A.: "Electronic Fetal Monitoring in Association With Paracervical Blocks," *American Journal of Obstetrics and Gynecology*, 116:1143-1146, August 15, 1973.

Bradycardia is defined for this study. Paracervical blocks (PCB) were administered to 326 patients in labor, and continuous electronic fetal monitoring was conducted. Of the 326 patients, 128 had variable deceleration patterns and 38 had late deceleration patterns. Of the 326 infants, 119 had bradycardia episodes after the paracervical blocks. Of these 119, 99 had either cord problems or a small placenta. "It appears that bradycardia after a paracervical block is often related to small placentas and/or cord problems. These problems are usually accompanied by variable or late deceleration fetal heart rate patterns. We have not been able to correlate a relationship between the block and low Apgar scores and feel the low scores are caused by the hypoxemic effect of the associated factors. It is evident that a fetus displaying variable or late decelaration patterns or a PCB bradycardia is at high risk and should not be compromised further by the use of paracervical blocks. They should also be observed closely for further signs of distress as the deceleration patterns seen after paracervical blocks may imply fetal compromise."

121. Garbagnati, Ersilia, and Manitto, Paolo: "A New Class of Bilirubin Photoderivatives Obtained in Vitro and Their Possible Formation in Jaundiced Infants," *Journal of Pediatrics*, 83:109-115, July, 1973.

Five listed bilirubin solutions were irradiated as explained with the result that "when bilirubin is irradiated in the presence of substances containing hydroxyl (-OH) or sulfhydryl (-SH) groups, irreversible photoadducts are formed in moderate or good yields." The properties of these bilirubin derivatives are described. It is suggested "that similar photoadducts may be formed in vivo during phototherapy." Implications are considered. An "editorial comment" by Dr. John F. Nicholson follows the article.

122. Gibbs, C.E.: "Diagnosis and Treatment of Uterine Conditions That May Cause Prematurity," *Clinical Obstetrics and Gynecology*, 16:159-170, December, 1973.

The incompetent cervical os and congenital anomalies of the uterus are individually discussed regarding diagnosis and treatment.

123. Gibson, Helen M.: Plasma Volume and Glomerular Filtration Rate in Pregnancy and Their Relation to Differences in Fetal Growth," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:1067-1074, December, 1973.

Studied with regard to plasma volume and glomerular filtration rate were 9 "healthy multigravidae with normal past obstetric histories" and 11 "multigravidae who had a history of reproductive failure ('poor reproducers')." Values were serially measured during pregnancy and also determined 3 months after delivery. The subjects and the methods used are described. The findings indicated that "those women with a history of poor reproductive performance showed somewhat smaller mean physiological changes during the pregnancies studied than those women with a normal past obstetric history, and the changes which occurred were to some extent, but not entirely, proportional to the size of the baby produced." Graphs depict these results.

124. Gilani, Shamshad H.: "Congenital Anomalies in Lead Poisoning," *Obstetrics and Gynecology*, 41:265-269, February, 1973.

In this described controlled study when lead acetate was administered once in varying doses to 2-day-old chick embryos, a definite dose-dependent effect regarding both survival of the embryo and the incidence of gross abnormalities resulted. "The principle malformations observed were: reduced body size, micromelia and twisted limbs, shortened and twisted neck, shortened beak, microphthalmia, ruptured brain and everted viscera. The most common developmental anomalies were retarded growth and neck abnormalities." Examples of these abnormalities are pictured. It is concluded "that lead is teratogenic to chick embryogenesis."

125. Glassman, Robert B.: "Similar Lesions of Infant and Adult Sensorimotor Cortical Lesions on Cats' Posture," *Brain Research*, 63:103-110, December 7, 1973.

Previous research is reviewed. It is noted that some studies have indicated greater sparing of function in animals who have sustained brain damage in infancy as compared to those sustaining it in adulthood. In order to obtain more information about sensorimotor recovery in infant cats, the placing and hopping reflexes were studied as described in 10 cats who received ablations of the sensorimotor cortex on 1 side of the brain at 2 to 14 days of age and approximately symmetrical ablations on the other side of the brain at age 5 months. When the reflexes were tested and scored, there was "no evidence of enhanced sparing of function following the ablations done in infancy." These and other findings are discussed.

126. Gluck, Louis, and Kulovich, Marie V.: "Lecithin/Sphingomyelin Ratios in Amniotic Fluid in Normal and Abnormal Pregnancy," *American Journal of Obstetrics and Gynecology*, 115:539-546, February 15, 1973.

A total of 470 amniotic fluid samples were obtained from 348 women of whom 201 had normal pregnancies and 147 had described complications of pregnancy. Lecithin/sphingomyelin (L/S) ratios were determined as described. Results are presented regarding

the comparison of L/S ratios measured by 2 different methods, the correlation of the L/S ratios with birth weight and gestational age in 134 random pregnancies, the prediction by the L/S ratio of respiratory distress and its severity, and the effects of maternal disease and other complications upon the L/S ratio. Results indicated that "only in normal pregnancy does the lecithin/sphingomyelin (L/S) ratio correlate with gestational age." "Abnormalities of pregnancy, including maternal, fetal, and placental conditions, may affect markedly the maturation of the fetal lung. Certain conditions associated, e.g., with maternal hypertension and severe placental problems including retroplacental bleeding and ruptured membranes accelerate L/S ratio maturation and other conditions such as diabetes mellitus (A, B, and C) delay maturation of the L/S ratio." These findings and their implications are discussed. "These studies suggest that an association exists between general major organ system maturation of the fetus - 'functional maturity' - and the L/S ratio, independent of gestational age or birth weight."

127. Gmitter, Nancy W., and Richards, Lois H.: "Pulley Feeding System," *Physical Therapy*, 53:973, September, 1973.

Such a system is described and pictured. It was devised to aid a 5-year-old boy with arthrogryposis in self feeding.

128. Goebelsmann, Uwe; Freeman, Roger K.; Mestman, Jorge H.; Nakamura, Robert M.; and Woodling, Bruce A.: "Estriol in Pregnancy. II. Daily Urinary Estriol Assays in the Management of the Pregnant Diabetic Woman," *American Journal of Obstetrics and Gynecology*, 115:795-802, March 15, 1973.

Daily 24 hour urinary estriol (E_3) and creatinine (C) levels were determined in 60 hospitalized, diabetic, pregnant women. Pregnancies were allowed to continue to spontaneous labor or until signs of fetal jeopardy, as defined, were present. Results are presented regarding the estriol excretion seen in these diabetic pregnancies and compared to 40 uncomplicated pregnancies, the day-to-day variations observed in the E_3 and C values, and the 'significant' drops in estriol excretion that were viewed in 14 of the 60 patients. "Had E_3 been determined only twice weekly, 9 of these 14 falls would have been missed or detected with delay. In pregnant diabetic subjects, urinary E_3 assays should be carried out daily if the obstetric management is based upon E_3 determinations." In this study sample, "there were no intrauterine fetal deaths, and only one neonatal death occurred during this non-intervention policy." Findings are discussed.

129. Goldberg, Herman K., and Drewry, Richard D., Jr.: "Ophthalmologic Examination of the Handicapped Child," *Pediatric Clinics of North America*, 20:45-60, February, 1973.

The evaluation of vision, the inspection of the external eye and cornea, the evaluation of extraocular muscle movements and muscle balance, and the ophthalmoscopic examination are each discussed as being necessary elements in the basic eye examination of the handicapped child.

130. Goodman, Libby: "The Efficacy of Visual-Motor Training for Orthopedically Handicapped Children," *Rehabilitation Literature*, 34:299-304, October, 1973.

"Specifically, this study was designed to determine if the visual, motor, and integrated visual-motor skills of children with this type of handicap could be improved

through participation in a systematic visual-motor training program." The subjects were 44 preschool-aged, orthopedically handicapped children. After being pre-tested on a described battery of tests, the children were randomly assigned to either an experimental or a control group. The experimental children then participated in a visual-motor training program (The Composite Training Program) which is described in detail. The program included 4 training areas: gross motor; fine motor; eye movement; and form perception and visual memory. "The goal was 60 days of training, 20 to 30 minutes per day. A minimum of 40 training sessions, i.e., 16 hours, was required of all experimental subjects." After the training program was completed, both groups were given all the pretests plus 3 additional tests. Test findings are reported and "indicate that supplemental visual-motor training had little effect on the motor, visual, and integrated visual-motor skills of physically handicapped children." "Apparently, participation in the experimental visual-motor program was no more beneficial than participation in the regular preschool program."

131. Goplerud, C.P.; White, C.A.; Bradbury, J.T.; and Briggs, T.L.: "The First Rh-Isoimmunized Pregnancy," *American Journal of Obstetrics and Gynecology*, 115:632-638, March 1, 1973.

This is a report of 109 first Rh-isoimmunized pregnancies. It is felt that too many clinicians believe that the baby of such a pregnancy will only be mildly affected, but findings from this study indicate "the necessity of careful antepartum assessment of the fetus during the first isoimmunized pregnancy." Much data are presented, suggestions for management are made, and further discussion by other physicians is conducted following the text.

132. Greenberg, David J.; O'Donnell, William J.; and Crawford, Donald: "Complexity Levels, Habituation, and Individual Differences in Early Infancy," *Child Development*, 44:569-574, September, 1973.

A total of 51 normal, full-term infants, 11 weeks of age, were given a rate-of-habituation test and a complexity-level test, as described, in order to "test the hypothesis that infants who are able to process and remember information most rapidly (rapid habituators) will be more advanced in cognitive-perceptual development, that is, will have higher complexity levels, than infants who are not able to process environmental information as rapidly (slow habituators)." A third group of infants were also differentiated in the study population. This group included those of the infants who were considered to be erratic habituators. The findings supported the hypothesis. "The present investigation, by demonstrating that two perceptual-attentional tasks hypothesized to be indicative of early perceptual-cognitive development are significantly related, lends further credence to the proposition that attentional variables may be important indices of intellectual-developmental behavior in infancy."

133. Griffiths, Margaret I., ed.: *The Young Retarded Child; Medical Aspects of Care.* Baltimore: Williams & Wilkins, 1973. 227 pp.

Among the factors discussed in the 18 chapters of this volume are early detection by both developmental and biochemical screening; the need for types of comprehensive, on-going assessment; and the services provided by the family doctor, by the

community in Britain, and by the hospital. Then special handicaps are individually considered, including malformation syndromes, blindness and deafness, motor disability, disorders of communication, the overactive child, epilepsy, and biochemical disorders. The final 3 chapters are devoted to aspects of prevention, including the perinatal and biochemical factors, and the medical-social aspects of prevention. A bibliography is included.

134. Griffiths, Margaret I., and Bowie, E. Mary: "The Use of Dimethothiazine in the Treatment of Childhood Cerebral Palsy," *Developmental Medicine and Child Neurology*, 15:25-32, February, 1973.

Studies on the usage of various medicines in the treatment of cerebral palsy are reviewed. Then described is a study, consisting of 2 controlled trials, in which dimethothiazine was administered to 15 described cerebral palsied children in order to determine its effect in relieving spasticity. Methods used and results obtained in both trials are presented. Findings indicated a significant improvement as defined in the spastic children who received dimethothiazine. Deterioration was noted after taking the drug in 2 children having dystonic cerebral palsy. "Dimethothiazine appeared to be particularly useful in children just beginning to walk or stand, and also as a preliminary to the application of below-knee plasters."

135. Gross, Gary P.; Hathaway, William E.; and McGaughey, H. Raymond: "Hyperviscosity in the Neonate," *Journal of Pediatrics*, 82:1004-1012, June, 1973.

Eighteen polycythemic infants having symptoms of hyperviscosity were studied as described in order to determine the relationship between the hyperviscosity, the polycythemia, and the symtoms. When the viscosity data from blood samples on these 18 infants were compared to that from healthy neonates, whole blood hyperviscosity was detected in the 18 polycythemic newborns. Clinical and laboratory data on these 18 infants are presented. "The infants had signs and symptoms such as plethora, cyanosis, respiratory distress, central nervous system manifestations, hyperbilirubinemia, thrombocytopenia, fragmented red cells, and hypoglycemia." Twelve of these neonates had partial exchange transfusions. This treatment "results in an improvement in the whole blood viscosity which is associated with an improved clinical course." Upon follow-up at between 7 to 23 months, 4 of the infants were found to have "significant motor and/or mental retardation," 10 were normal, and 4 had been lost to follow-up. Only 2 of the 12 neonates who had had partial exchange transfusions were found to have sequelae. Case reports are presented on 3 of the infants. Pathogenesis is discussed.

136. Grundy, P.F.: "A Rational Approach to the 'At Risk' Concept," *Lancet*, 2:1489, December 29, 1973.

The meanings of the term, at risk, and other related terms are discussed. Definitive terminology is deemed necessary.

137. Gunderman, J. Richard, and Stamler, Richard: "Neuropsychological Residuals Seven Years After Acute Encephalitis," *Clinical Pediatrics*, 12:228-230, April, 1973.

Studied were 21 children who had been diagnosed as having encephalitis 7 years prior to follow-up and 20 control children. These children, the clinical symptoms manifested during the disease, and lab findings are described as are the clinical, psychological and electroencephalographical findings at follow-up. Thirteen of the 21 children having had encephalitis were found to have neurologic abnormalities, and 8 had EEG abnormalities. "The psychologic testing suggested that no significant loss of cognitive abilities had occurred, but these children showed decreased psychic energy and drives, with greater compliance and passivity. None had the hyperkinetic behavior which is traditionally believed to be a signal of acute encephalitis." Findings are discussed, and conclusions are presented.

138. Gupta, P.K., and Moore, J.: "The Use of Doxapram in the Newborn," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:1002-1006, November, 1973.

The effect of doxapram hydrochloride, "a new respiratory stimulant with a wide safety margin," was investigated by comparing serial arterialized capillary blood samples from a control group of neonates who had only routine resuscitation with serial samples from neonates who had also received varying single doses of doxapram hydrochloride. All of the mothers had received narcotic analgesics or general anesthetics for delivery which have been found to often cause neonatal respiratory depression. "It was seen that doxapram-treated infants had less fall of pH and no rise of Pco_2 at 10 minutes after birth. The pH and Pco_2 values, however, returned to normal physiological limits by 4 to 24 hours in both groups, though the doxapram-treated group had a faster recovery." "One can conclude that doxapram may be used in the management of babies who are not in need of active resuscitation but have been born to mothers who have received narcotic drugs during labour. It may also have a place as an adjuvant to other forms of resuscitation."

139. Guralnick, Michael J.: "A Research-Service Model for Support of Handicapped Children," *Exceptional Children*, 39:277-282, January, 1973.

Such a model is described. It is designed to decrease the conflict that often exists between the research units and the service units in agencies that are devoted to the support and development of handicapped children. It is recommended that each service program be turned into a self contained research-service unit and that research be conducted while simultaneously providing educational and other supportive services. Methods are described, and the advantages and limitations of such a model are pointed out.

140. Gusdon, John P., Jr., and Witherow, Candace: "Possible Ameliorating Effects of Erythroblastosis by Promethazine Hydrochloride," *American Journal of Obstetrics and Gynecology*, 117:1101-1108, December 15, 1973.

Previous research is reviewed. Reported are findings on the use of this drug in laboratory animals and in a series of Rh-sensitized pregnant women. The histories of these 13 patients are outlined. "It has not been possible, with this small series of patients, to prove unequivocally its effectiveness in ameliorating the

effects of this disease. However, it is believed that in some individual cases beneficial results have occurred at the dosage used. The probable mechanisms of action of this drug in vivo, is the metabolic suppression of the fetal reticuloendothelial system cells."

141. Guthrie, John T.: "Educational Assessment of the Handicapped Child," *Pediatric Clinics of North America*, 20:89-103, February, 1973.

Basic concepts in the educational assessment of the handicapped child are explained. Four areas in which information must be obtained during the evaluation process in order to initiate a program to improve the child's abilities are discussed. "First, this information must be obtained with the child's probable adult level of functioning serving as a backdrop for the evaluation." The probable adult expectations for the trainable mentally retarded child, the educable mentally retarded child, the cerebral palsied child, and the learning disabled child are each described. Second, the child's general learning characteristics, including intelligence must be evaluated. Third, the specific educational strengths and weaknesses of the child must be assessed. Fourth, it is important to determine the conditions necessary for learning for the individual child.

142. Hackman, Helen, and Jaslow, Robert: "Resources Available in Northern Virginia for the Handicapped Child," *Clinical Proceedings of Children's Hospital National Medical Center*, 29:148-155, July-August, 1973.

Such resources are described by the 2 authors in panel discussion form, and questions from the audience are asked and answered by the authors. Services include a Cerebral Palsy Clinic, the Arlington County Diagnostic and Evaluation Clinic, a preschool center, early education programs, and a planned series of residential centers.

143. Hagberg, B.; Olow, I.; and Hagberg, G.: "Decreasing Incidence of Low Birth Weight Diplegia - An Achievement of Modern Neonatal Care?" *Acta Paediatrica Scandinavica*, 62:199-200, March, 1973.

A representative sample of 429 children having cerebral palsy in Sweden and born between 1959 and 1968 were reanalyzed regarding their clinical syndromes with those born in the first 5-year period compared to those born in the second 5-year period. Cerebral palsy was found to have decreased significantly in total incidence during the second 5-year period. This decrease was "due to a likewise significantly lowered number of diplegic babies with a birth weight less than 2,500 g." Implications are discussed. This decreasing incidence "coincides in time with the introduction in Sweden of new routine procedures in the care of premature babies."

144. Hagen, Chris; Porter, Wyne; and Brink, Joyce: "Nonverbal Communication: An Alternative Mode of Communication for the Child With Severe Cerebral Palsy," *Journal of Speech and Hearing Disorders*, 38:448-455, November, 1973.

Findings are reported of a study involving 4 nonverbal, mentally retarded, cerbral palsied children who were involved in using an electromechanical device as a nonverbal means of communication. This device is pictured and described, and procedures for its use are explained. Staff participation and a positive attitude toward the program are critical factors. The program generally had a positive impact on the staff who cared for the children. "All the children easily learned to use the communication device as a means of signaling distress and the need for attention. Most of them learned to use it to communicate their basic needs."

145. Halstead, Lauro S.: "Wheelchair Odometer: Method for Quantitating Patients' Mobility in Wheelchairs," *Archives of Physical Medicine and Rehabilitation*, 54:39-42, January, 1973.

Such a device is described and pictured. It was designed to quantitatively measure in an objective manner what a patient is actually doing, as opposed to what he is capable of doing, with respect to mobility in a wheelchair. The design of the instrument, its advantages and disadvantages, and its applications are explained.

146. Hambleton, G., and Appleyard, W.J.: "Controlled Trial of Fresh Frozen Plasma in Asphyxiated Low Birthweight Infants," *Archives of Disease in Childhood*, 48:31-35, January, 1973.

Previous research is reviewed. In order to evaluate its effect on coagulation status and mortality and morbidity, fresh frozen plasma was infused as described in 33 premature and small-for-dates neonates. Thirty-three similar newborns received no such treatment. "The findings based on 66 infants were as follows: (1) There was no evidence that infusion of fresh frozen plasma prevented intraventricular haemorrhage. (2) Thrombotest did not appear to be a useful, discriminant test for 'at risk' infants. (3) Asphyxiated low birthweight infants do not respond to vitamin K_1 in respect of thrombotest or prothrombin time. (4) The initial coagulation status of small-for-dates infants could not be distinguished from normal premature infants." These findings are discussed.

147. Hancock, B.W.: "Clinical Assessment of Gestational Age in the Neonate," *Archives of Disease in Childhood*, 48:152-154, February, 1973.

The gestational age of 522 neonates was assessed using "a scoring system, based on a combination of neurological and external criteria." Results are presented with regard to the 434 normal neonates, the 3 abnormal infants, the 4 infants born by extended breech delivery, and those infants having low Apgar scores. Five sets of twins were included. Findings are discussed. The scoring system was found to be both an accurate and practical means of estimating gestational age in newborns. However, false low scores may be arrived at in ill or abnormal infants. Reliability may be increased in these cases by repeating the scoring procedure after 24 hours.

148. Hankin, Lester; Heichel, Gary H.; and Botsford, Richard A.: "Lead Poisoning From Colored Printing Inks," *Clinical Pediatrics*, 12:654-655, November, 1973.

A case is described which directed the authors to the finding that the "lead contained in colored pages of magazines may endanger children with pica." Printing information obtained about such magazine pages is presented.

149. Hanshaw, James B.: "Herpesvirus Hominis Infections in the Fetus and the Newborn," *American Journal of Diseases of Children*, 126:546-555, October, 1973.

Such infections are comprehensively discussed in this review article with regard to their epidemiology, pathogenesis, clinical manifestations, management, and prognosis. A 61-item bibliography follows the article.

150. Harbert, Guy M., Jr.: "Evaluation of Fetal Maturity," *Clinical Obstetrics and Gynecology*, 16:171-198, December, 1973.

The clinical indicators and the laboratory procedures used to evaluate fetal maturity are reviewed. Those clinical indicators discussed are the calculation of gestational duration from menstrual data and the estimation of fetal weight. Those laboratory procedures discussed include radiologic methods; ultrasonic measurements; determination in amniotic fluid of chemical constituents such as bilirubin, creatinine, and phosphalipids; the exfoliative cytology of amniotic fluid; and the measurement of the amount of estriol in maternal urine.

151. Harding, P.; Possmayer, F.; Milne, K.; Jaco, N.T.; and Walters, J.H.: "Amniotic Fluid Phospholipids and Fetal Maturity," *American Journal of Obstetrics and Gynecology*, 115:298-306, February 1, 1973.

Duplicate amniotic fluid specimens were obtained between the 14th and 42nd weeks of gestation in 120 patients. The phospholipid concentration was then determined as described. It was found that small quantities of blood in the amniotic fluid altered the lecithin and sphingomyelin concentrations and the L/S ratio. The Dubowitz scoring system was used to assess neonatal maturity in 30 infants who were delivered within 48 hours of having an amniotic fluid sample obtained. A stronger correlation was found between the L/S ratio and the maturity score than was found between the L/S ratio and birth weight. "Of 20 viable infants (>20 weeks) who demonstrated an amniotic fluid L/S ratio less than 2 within 48 hours of birth, 6 developed the respiratory distress syndrome (RDS) from which 2 died. No infant associated with a ratio of greater than 2 within 2 days of birth developed RDS." These findings and their implications are considered, and further discussion follows the article.

152. Harris, Thomas R., and Nugent, Michael: "Continuous Arterial Oxygen Tension Monitoring in the Newborn Infant," *Journal of Pediatrics*, 82:929-939, June, 1973.

Described is an umbilical oxygen catheter system which was designed to continuously monitor the arterial oxygen tension (Pao_2) in neonates. The system utilizes "an indwelling polarographic oxygen electrode inserted as a modified umbilical artery catheter." Such monitoring was conducted on 48 ill newborns for a total of 147 days. The methods of evaluating the system are explained as are the findings concerning the "in vitro characteristics of the IBC oxygen electrode," the "in vivo accuracy of the oxygen electrode system," and the "difficulties and complications of in vivo Pao_2 monitoring." "Over the full range of oxygen tension between 10 and 252 mm Hg, the standard error from the predicted value (the laboratory value assumed to be absolute) was $\pm$18.8 mm Hg, with greatest error noted in the higher Pao_2 ranges." "This degree of error makes it inadvisible to rely on the indwelling oxygen monitoring system alone for quantitative Pao_2 measurements." The advantages and disadvantages of the system are discussed. "Although the information this system provides in terms of relative or real-time Pao_2 changes makes it a useful tool in the management of the acutely ill neonate, the technique requires checking by serial standard in vitro blood gas analyses, and its use should be limited to newborn intensive care units." An editorial comment follows the article.

153. Harrison, K.A., and Ibeziako, P.A.: "Maternal Anaemia and Fetal Birthweight," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:798-804, September, 1973.

In order to examine the effects of maternal anemia on fetal birth weight, the following groups of pregnant Nigerian women were studied: 43 who were anemic during pregnancy and at delivery, 142 who "had been successfully treated for anaemia during pregnancy," 35 who had sickle-cell anemia, and 65 healthy controls. Described are the methods used in the treatment of the anemia, the assessment of the length of gestation, and the selection of the patients. "When other factors known to reduce fetal birthweight were excluded, it was found that maternal anaemia (haematocrit less than 30 per cent) was itself associated with retardation of fetal growth and that this was most marked in the presence of sickle-cell anaemia. If, at the end of

pregnancy, maternal anaemia still remained uncorrected, than a 2 per cent drop in maternal haematocrit reduced fetal birthweight by about 100 g."

154. Hartog, M.: "Human Chorionic Somatomammotrophin and Its Clinical Significance," *Clinical Endocrinology*, 1:209-218, April, 1972.

In this review article Dr. Hartog discusses the source of this hormone, its structure, its metabolic effects, the methods of assay, and its clinical significance in both normal and abnormal pregnancy. The levels of serum HCS found in research on rhesus iso-immunization, diabetes mellitus, threatened abortion, toxemia, and trophoblastic disease are specifically considered. Much previous research is mentioned, and a lengthy reference list follows the text.

155. Haslam, Robert H.A.: "Physical Examination and Clinical Investigation of the Handicapped Child," *Pediatric Clinics of North America*, 20:27-44, February, 1973.

Considered in this article are the general physical examination of the handicapped child, the laboratory examination, and the factors involved in the examination of the cranium. Also described is the examination of the cranial nerves, the examination of movement and tone abnormalities, and the evaluation of muscle strength. Special diagnostic procedures of use in the examination of the handicapped child are also explained.

156. Hassler, R.: "Sagittal Thalamotomy for Relief of Motor Disorders in Cases of Double Athetosis and Cerebral Palsy," *Confinia Neurologica*, 34:18-28, 1972.

The condition of double athetosis is neurologically described, and the procedure of sagittal thalamotomy is explained. "Sagittal thalamotomy has been especially effective against the combination of athetosis and spasticity in 31 cases; it is able to reduce the rate of recidives of athetotic disorders remarkedly without apparent side effects."

157. Haswell, Glenn L., and Morris, John A.: "Amniotic Fluid Volume Studies," *Obstetrics and Gynecology*, 42:725-732, November, 1973.

Four objectives of the presented study are listed: "1) To establish Cardiogreen as a stable and reliable agent with which to measure amniotic fluid volume during midtrimester gestation. 2) To compare volumes determined by Cardiogreen with values obtained by two other methods: ^{125}I-RISA and direct fluid volume measurement. 3) To compare our data with that reported by other investigators. 4) To correlate amniotic fluid volume with the parameters of fetal weight and crown-rump length." Amniotic fluid volume was determined in 40 pregnancies having gestational ages of from 14 to 20 weeks. These patients were candidates for therapeutic abortion. Cardiogreen was employed in the dye dilution method which is described. The accuracy of Cardiogreen was established as in Objective 2, and a significant relation was found between amniotic fluid volume and fetal weight in these cases. No correlation was shown to exist between amniotic fluid volume and fetal crown-rump length. "Cardiogreen appears to be an accurate and reliable substance for the determination of amniotic fluid volume in human midtrimester gestation."

158. Haworth, J.C.; Dilling, Louise A.; and Vidyasagar, D.: "Hypoglycemia in Infants of Diabetic Mothers: Effect of Epinephrine Therapy," *Journal of Pediatrics*, 82: 94-97, January, 1973.

Such an effect was studied in 3 groups of hypoglycemic infants of diabetic mothers. Group 1 infants (12) received glucose intravenously. Group 2A infants (7) received long-acting epinephrine and glucose as described. Group 2B infants (4) received epinephrine but no glucose. Results are presented and discussed. Epinephrine was not found to be of value in the management of infants of diabetic mothers.

159. Hersey, William J., Jr., and Lapidus, Karin R.: "Restoring the Balance," *Pediatric Clinics of North America*, 20:221-231, February, 1973.

Discussed in this article is the restoration of balance to the family of a handicapped child. The responsibility of the pediatrician to the family and to the child, the parental response upon learning their child is handicapped, and the management of such parents are among the aspects discussed. The stages of parental adjustment to the problem and resources which the physician can utilize in the management of the child are described. "Resources for the Handicapped Child" are outlined in a table.

160. Himwich, Williamina, ed.: *Biochemistry of the Developing Brain.* Volume 1. New York: Marcel Dekker, 1973. 388 pp.

In this 2 volume work the many contributors discuss progress in their specialized areas. "The volumes also indicate what may be learned from the study of the developing brain: which influences are to be avoided during growth periods in order to prevent damage to the nervous system; an understanding of early malfunction in the central nervous system leading to mental retardation; and a knowledge of control mechanisms." "Volume 1 deals with the species comparison studies of brain amino acids, the development of the GABA system, amino acid imbalance, myelination, amino acid transport, metabolic compartmentation, and the effects of hormones on cerebral maturation." Volume 1 contains its own bibliography and indexes.

161. Himwich, Williamina, ed.: *Biochemistry of the Developing Brain.* Volume 2. New York: Marcel Dekker, 1973. 325 pp.

"Volume 2 contains additional studies on hormonal effects, carbohydrate metabolism, in vitro studies of cerebral metabolism, enzyme development, cellular growth, and the effects of hypoxia and hypokinesia." Volume 2 contains its own bibliography and indexes.

162. Hinkley, Clark; O'Neil, Lynn; and Cassady, George: "Amniotic Fluid Creatinine in the Rh-Sensitized Pregnancy," *American Journal of Obstetrics and Gynecology*, 117: 544-548, October 15, 1973.

A total of 165 samples of amniotic fluid were obtained from 62 normal pregnancies and from 32 Rh (D)-sensitized pregnancies. The creatinine concentration in these samples was determined in order to compare the 2 types of pregnancy regarding the ability of the amniotic fluid creatinine level to predict gestational maturity. In

the normal pregnancies, a significant correlation was found between the amniotic fluid creatinine concentration and gestational age with a creatinine concentration of 1.8 mg percent or more being associated with fetal maturity. In the Rh-sensitized patients, the amniotic fluid creatinine concentration was found to be significantly lower than in the normal patients with "values less than 1.8 mg per cent commonly (11 of 15) accompanying fetal maturity." A relationship was found to exist in the Rh-sensitized cases between the severity of the fetal hemolytic disease and the amniotic fluid creatinine concentration with a decline in the creatinine concentration as gestational age advanced being indicative of "serious perinatal morbidity and a 40 per cent risk of perinatal death." On the basis of the results caution is advised in interpreting amniotic fluid creatinine levels in relation to fetal maturity. However, "these data suggest that serial analysis of creatinine concentrations in conjunction with routine analysis of amniotic fluid bilirubin and total osmolality may be of significant value in the prospective clinical management of the Rh-sensitized pregnancy."

163. Holt, E.M.; Boyd, I.E.; Dewhurst, C.J.; Murray, J.; Naylor, C.H.; and Smitham, J.H.: "Intrauterine Transfusion: 101 Consecutive Cases Treated at Queen Charlotte's Maternity Hospital," *British Medical Journal*, 3:39-43, July 7, 1973.

These 101 cases were studied over a period of 4 1/2 years with 6 of the cases being excluded for described reasons. The technique used is explained. Findings are reported regarding the previous pregnancies of the mothers, their present pregnancy, hydrops, maternal complications, fetal complications, and liveborn infants. Of the 95 cases investigated in detail, the intrauterine transfusion was performed successfully in 93. Some 46.3% (44) of the babies survived. The babies have been followed for from 3 months to 4 years, and all, except one who is "severely retarded," are developing normally thus far.

164. Hopkins, Ian J.: "Seizures in the First Week of Life; A Study of Aetiological Factors," *Medical Journal of Australia*, 59-II:647-651, September 16, 1972.

In order to determine possible etiological factors involved in neonatal convulsions, 75 consecutive infants who had seizures during the first week of life were compared with 70 control neonates regarding numerous prenatal and neonatal factors. Results are presented concerning the incidence of neonatal seizures in the population of live births during the period of study, obstetric and pediatric data on the 2 groups of newborns, general family and past medical information, special investigations carried out on the infants with seizures, and pathological findings. The mator etiological diagnoses are listed with fetal hypoxia heading the list as it was seen in 43 cases. "It is concluded that frequently there is a combination of factors - particularly obstetric events predisposing to foetal hypoxia and neonatal metabolic disturbance - leading to neonatal seizures."

165. Hoskins, Theresa A., and Squires, Janet E.: "Developmental Assessment: A Test for Gross Motor and Reflex Development," *Physical Therapy*, 53:117-126, February, 1973.

Such a test is presented and the process of its development is described. Phase 1 of this process consisted of the compilation of a literature search to yield a set of norms for gross motor and reflex development. In Phase 2 the resultant form was tested for its reliability and validity on 72 normal children, ranging from birth to

age 5 years. In Phase 3 the test was revised and then applied in a clinical situation. Results are presented and discussed. "The final form is currently in use in a cerebral palsy clinic."

166. Howell, R. Rodney: "Prenatal Diagnosis in the Prevention of Handicapping Disorders," *Pediatric Clinics of North America*, 20:141-149, February, 1973.

The history of prenatal diagnosis is briefly reviewed, and the procedure of amniocentesis is briefly described. Then discussed are studies that have been conducted on the supernatant amniotic fluid, on the amniotic fluid cells directly, and on cultivated amniotic fluid cells. "Other areas of potential antenatal detection" and the risks, problems and philosophies are explained.

167. Howell, Sarah Esselstyn: "Psychiatric Aspects of Habilitation," *Pediatric Clinics of North America*, 20:203-219, February, 1973.

This article deals with the 'psychiatric aspects of habilitation' relating to the handicapped child with the impact of the handicap on the family, on the child, and on the multi-discipline staff being individually considered. Various approaches to diagnosis and to treatment are also discussed.

168. Hownslow, Dianne; Wood, Carl; Humphrey, Michael; and Chang, Allan: "Intrapartum Drugs and Fetal Blood pH and Gas Status," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:1007-1012, November, 1973.

The effect of various analgesic drugs administered during labor on cord blood Po_2, Pco_2, and pH was assessed. Five groups of women were studied: those who received no drugs during labor (15), those who received pethidine (8), those who received pethidine and nalorphine (35), those who received pethidine and other listed drugs (9), and those who received pethidine, nalorphine, and other listed drugs (20). Much data are presented. It was "demonstrated that nalorphine may have a detrimental effect on fetal acid-base and blood gas status." "Delivery of the head was slower in patients given analgesic drugs in labour."

169. Hrbek, Antionin; Karlberg, Petter; and Olsson, Torsten: "Development of Visual and Somatosensory Evoked Responses in Pre-Term Newborn Infants," *Electroencephalography and Clinical Neurophysiology*, 34:225-232, March, 1973.

Visual evoked responses (VERs) and somatosensory evoked responses (SERs) were studied as described in 48 neonates having gestational ages of from 24 to 42 weeks. A total of 98 examinations were preformed. VER and SER findings are presented separately, and diagrams show their development and change as gestational age progresses. The principle results are listed in the summary. They indicate that "evoked responses are a suitable tool for developmental studies in man because of the close dependence of their variables on cerebral maturation."

170. Hutchings, Donald E.; Gibbon, John; and Kaufman, Mavis A.: "Maternal Vitamin A Excess During the Early Fetal Period: Effects on Learning and Development in the Offspring," *Developmental Psychobiology*, 6:445-457, September, 1973.

A teratogenic dose of Vitamin A was administered to pregnant rats on Days 14 and 15 of gestation. There were 2 control groups: 1 received the vehicle without the vitamin, and 1 was not disturbed during pregnancy. All of the offspring were placed with untreated foster mothers after birth. Growth and development of the rats were noted, and behavioral testing was conducted as described, after which all of the rats were sacrificed, and brains were examined histologically. Findings indicated that "Vitamin A excess administered during the early fetal period produces a generalized retardation in growth and development, a reduced brain size, and a behavioral deficit characterized by a decreased ability to inhibit responding to a signal which indicates nonreinforcement." "The dose level of vitamin A used here was well above the 6,000 USP units recommended as daily dietary allowance for humans during pregnancy. What is important, however, is the demonstration that a chemical teratogen administered after major organogenesis has been completed, can produce a subtle behavioral deficit in the absence of obvious neurological impairment. The possible role of maternal drug exposure during the later stages of pregnancy in the etiology of minimal brain dysfunction in children should be carefully considered."

171. Hutchinson-Smith, Barbara: "Skinfold Thickness in Infancy in Relation to Birthweight," *Developmental Medicine and Child Neurology*, 15:628-634, October, 1973.

Skinfold thickness was measured at the biceps, triceps, subscapular and suprailiac sites in 200 infants at 1 month, 3 months, 6 months, 9 months, and 1 year of age. Findings are presented regarding the skin thickness found at each of the measurement periods, the comparison of boys and girls "in over-all mean skinfold thickness," the increase seen in mean skinfold thickness between 1 and 3 months of age, and "the site at which the maximum value of the five successive measurements was reached first." "The results show that between one and three months boys with birthweights below 3.2 kg have a significantly greater increase in skinfold thickness at the triceps and subscapular sites than boys with birthweights above 3.7 kg; they also have a significantly greater increase at the biceps than girls with birthweights below 3.0 kg. After three months the over-all mean skinfold thicknesses (the mean of all four sites) are indistinguishable among boys, while girls with birthweights below 3.0 kg have a lower over-all mean skinfold thickness than girls with birthweights above 3.5 kg until six to nine months of age. Of the four sites measured, the subscapular reaches its maximum thickness earlier than the other three sites." "The findings of this study show that the rate at which fat is deposited in infancy may be related to the sex and birthwieght of the infant."

172. Hyvarinen, Marcia; Zeltzer, Paul; Oh, William; and Stiehm, E. Richard: "Influence of Gestational Age on Serum Levels of Alpha-1 Fetoprotein, IgG Globulin, and Albumin in Newborn Infants," *Journal of Pediatrics*, 82:430-437, March, 1973.

Methods used in estimating gestational age in the newborn are reviewed. Studied with regard to serum levels of alpha-1 fetoprotein, IgG globulin, and albumin were 153 neonates of varying gestational ages. The determined values were then correlated with gestational age. The infants, the methods used, and the results obtained are described. Also reported are the results of correlating combinations of serum proteins with gestational age. Neonatal levels of alpha-1 fetoprotein were found

to fall as gestational age increased while levels of IgG and albumin rose as gestational age increased. "Thus the levels of alpha-1 fetoprotein are inversely proportional to gestational age ($r = -0.81$, $p < 0.001$), and the levels of albumin ($r = 0.58$, $p < 0.001$) and IgG ($r = 0.81$, $p < 0.001$) are directly proportional to gestational age. These physiologic changes in alpha-1 fetoprotein, IgG, and albumin may be used to estimate gestational age."

173. Iffy, Leslie; Chatterton, Robert T.; and Jakobovits, Antal: "The 'High Weight for Dates' Fetus," *American Journal of Obstetrics and Gynecology*, 115:238-247, January, 1973.

Such fetuses and research on them are discussed. Because of the lack of published data on the rate of intrauterine development at the early gestational phases, new early growth rate patterns, from the 6th to the 19th weeks of gestation, were developed by described methods using 534 embryos and fetuses obtained from therapeutic abortions. These data were then correlated with other standards of later fetal growth. "With the new and reviewed standards for comparison with fetal growth patterns in 441 abnormal gestations, a high incidence of 'large for calculated gestational age' fetuses could be demonstrated in connection with early abortion, ectopic gestation, and placenta previa." These findings and their implications are discussed with results of other studies considered. "The evidence indicated that miscalculation of the expected date of confinement because of an apparent menstrual episode after fertilization was the reason for most of these discrepencies. It has been suggested that delayed ovulation and luteal phase defect are the pathogenetic factors responsible for the anomalous postconception bleeding and that these etiologically interrelated phenomena are closely associated with the occurrence of 'overripeness' of the ovum." A discussion of these results follow the text.

174. Illingworth, R.S.: *The Development of the Infant and Young Child; Normal and Abnormal.* 5th ed. Edinburgh and London: Churchill Livingstone, 1972. 377 pp.

In this fifth edition, Dr. Illingworth has brought the subject "up to date as far as the late autumn of 1971" by taking into account new research and original papers and books. Among the topics discussed in the 19 chapters are developmental testing; the prenatal, perinatal, and environmental factors affecting development; reflexes and reactions; assessment of maturity; and the assessment of the newborn, the older infant and the child. Also considered is the measuring of the head circumference of the baby, developmental variations, history taking, the interpretation of information, the diagnosis of mental retardation, the diagnosis of cerebral palsy, "the association of mental subnormality with physical defects and disease," and "mistakes and pitfalls in developmental diagnosis." References are listed after each chapter.

175. Irwin, Orvis C.: *Communication Variables of Cerebral Palsied and Mentally Retarded Children.* Springfield, Ill.: C.C. Thomas, 1972. 370 pp.

In this book the author brings together the results from a series of investigations on the speech and language of cerebral palsied and mentally retarded children. There are 7 principle variables that are considered to be of prime importance in communication efforts. "The variables are (1) articulation, (2) sound discrimination, (3) abstraction, (4) vocabulary, (5) the sentence, (6) immediate memory span and (7) manifest anxiety." Each of these variables and their interrelationships are considered in the book in Parts I-VII with several tests used to assess these variables in handicapped children described. In an eighth part the "language" of these children is explored. Part IX contains 3 appendices, in the first of which are described the subjects that took part in the various studies. The other 2 appendices contain the numerous charts and record forms, respectively, that were used in the studies. Part X is a "Bibliography."

176. Isenberg, J. Nevin, and Fisch, Robert O.: "Double-Light Phototherapy for Neonatal Hyperbilirubinemia," *Journal of Pediatrics*, 83:116-118, July, 1973.

A case report is presented as an example of the more effective control of bilirubin levels in neonates which the authors have achieved "by increasing the skin surface area exposed to fluorescent illumination." No adverse effects were noted. Apparatus is pictured, and the implications are considered.

177. Ishiguro, Tatsuya, and Nishimura, Toshio: "Radioimmunoassay of Maternal Serum a-Fetoprotein Associated With Pregnancy," *American Journal of Obstetrics and Gynecology*, 116:27-33, May 1, 1973.

a-Fetoprotein (AFP) was studied by radioimmunoassay in nonpregnant healthy women, in pregnant women at various stages of gestation, and in postpartum women. A total of 289 serum samples and 7 urine samples were analyzed. Results are presented regarding the serum AFP concentration found in normal nonpregnant women; in sera during pregnancy; in maternal sera postpartum; in pregnancy urine; in the sera of 17 patients obtained during labor, immediately after delivery, and 5 days postpartum; and in the sera of patients with hydatidiform mole and choriocarcinoma. Findings are discussed. "It was speculated that the AFP detected in the serum of pregnant women may be, at least in part, of maternal origin. It was also suggested that the inhibition against the repressor-operator gene system which was responsible for AFP synthesis was accelerated in pregnancy due to unknown factor(s), probably of placental origin, resulting in maternal AFP production."

178. Iyengar, Leela: "Chemical Composition of Placenta in Pregnancies With Small-for-Date Infants," *American Journal of Obstetrics and Gynecology*, 116:66-70, May 1, 1973.

Analyzed regarding chemical composition were 57 placentas, of which 32 were from pregnancies resulting in infants of normal birth weight and 25 were from pregnancies resulting in small-for-date infants. All mothers were considered to be in a poor-income class in India. Methods of analysis are described. Compared to the placentas from the normal pregnancies, the placentas from the pregnancies resulting in small-for-date infants were found to be smaller in size and lower in the amounts of nitrogen, DNA, RNA, glycogen, and heat-stable alkaline phosphatase. "These observations suggest that in placentas of pregnancies with small-for-date infants there is an acceleration of the aging process which may have functional significance."

179. Janisch, H., and Leodolter, S.: "Estimation of Placental Function by Measuring the HPL Serum Level and Recording the Placental Blood Flow," *Journal of Perinatal Medicine*, 1:4:283-286, 1973.

Described is a study in which the results obtained from measuring serum HPL levels and placental blood flow values in 86 gravidae were compared. The 86 patients were divided into 3 groups: 1) a control group of 39 women having normal pregnancies, 2) 21 women with toxemia and normal serum HPL levels, and 3) 26 women with toxemia and below normal serum HPL levels. Findings indicated that "whenever the serum HPL was abnormal the placental blood flow recordings were similarly abnormal." "However, in three cases with pathological placental blood flow values normal HPL levels were recorded in the serum." These results are discussed.

180. Jelinek, Janis A., and Schaub, Mary T.: "A Model of Parent Involvement in Programming for Communicatively Handicapped Children," *Rehabilitation Literature*, 34:231-234, August, 1973.

Described is a program model for communicatively handicapped young children which was developed at the University of Wyoming and was designed to meet the needs of such children and their parents who live in rural, sparsely populated areas. The staff of the project, the services to the 33 children in the project, the structure of the program which included an intensive summer phase, and the services to the parents and family offered by the program are discussed. "Learning packets" for home use, the workshop program, and the follow-up phase are among other aspects considered.

181. Jílek, L.; Janata, V.; Londonová, A.; Makoc, Z.; Trojan, S.; and Vorel, F.: "The Influence of Stagnant Hypoxia on the Activity of Some Dehydrogenases and Aminotransferases in the Brain of Rats During Ontogenesis," *Developmental Psychobiology*, 6: 139-146, March, 1973.

The carotid arteries of Wistar rats, ages 5, 12, and 25 days of age and adult, were ligated as described to produce stagnant hypoxia of the brain. The rats were decapitated 4 hours after ligation, their heads were frozen, and enzyme activity changes were analyzed in the tissue of the prosencephalon. Results indicated that "the influence of stagnant hypoxia on the activity of the enzymes was clearly dependent on the developmental maturity of the nervous system." The enzymatic changes that were observed "support the concept of a 'metabolic adaptive reaction' of immature nerve tissue to stagnant hypoxia."

182. Johnston, D.I., and Bloom, S.R.: "Plasma Glucagon Levels in the Term Human Infant and Effect of Hypoxia," *Archives of Disease in Childhood*, 48:451-454, June, 1973.

A total of 56 mothers and their normal neonates were studied with regard to plasma glucagon levels. Methods are explained. Forty-four of the infants had been delivered by cesarean section. The glucagon levels of these infants were compared to those of 20 neonates with fetal distress as defined. At delivery there was no significant difference between the mean plasma glucagon level of the normal infants delivered vaginally (140 pg/ml), that of their mothers (122 pg/ml), and that of the infants delivered by cesarean section (130 pg/ml). However, there was a significant difference shown between the glucagon level at birth in those infants with fetal

distress (244 pg/ml) and both their mothers and the normal infants at birth. Two hours after birth a significant difference was noted between the glucagon level of the normal infants and that of their mothers. The former had risen while the latter had fallen. These findings are discussed and interpreted. "Whereas the rise in neonatal glucagon 2 hours after birth might have been caused by a mean fall in blood glucose of 23 mg/100 ml, the infants with fetal distress had normal glucose levels, so that another mechanism must be responsible for their raised glucagon."

183. Jonasson, Lars Erik: "The Clinical Value of Amniotic Fluid Analysis in Pregnancies Complicated by Rh-Isoimmunization or Hepatosis," *Acta Obstetricia Et Gynecologica Scandinavica*, 52:2:113-130, 1973.

A total of 605 amniotic fluid samples were obtained from 363 women who were in their last trimester of pregnancy. This group consisted of 81 women who were considered to be having normal pregnancies, 239 women with isoimmunization and affected fetuses, 29 women with hepatosis gravidarum, and 14 nonimmunized women with other complications of pregnancy. "The liquor was analysed with respect to ΔE_{450} (the optical density at 450 nm), progesterone and total protein content. On 172 samples measurements of the acid and alkaline phosphatase activity were also performed." Methods are described. Data from these measurements were "studied in relation to duration of pregnancy, cord blood haemoglobin levels, cord serum bilirubin levels, infant birth weight, maternal serum bilirubin levels, maternal alkaline phosphatase levels, maternal age, order of pregnancy, maternal and infant blood groups." Results are presented.

184. Jones, Byron C., and Clark, Dennis L.: "Mother-Infant Separation in Squirrel Monkeys Living in a Group," *Developmental Psychobiology*, 6:259-269, May, 1973.

Three male and 2 female squirrel monkey infants, who had been reared in a group with their mothers, were separated from their mothers at from 153 to 186 days of age. Three 5 day periods were studied: the preseparation, the separation, and the reunion. Methods of behavior observation are described, and terms are defined. During the separation period activity play, contact play, mixed play, object manipulation, and sex play were found to decrease while affiliative behaviors and locomotion increased. "After reunion, locomotion and affiliation returned to baseline levels while contact play, mixed play, and object manipulation remained depressed." Results are discussed.

185. Jordan, June B.: "OCD Urges Special Education's Support for New Head Start Services to Handicapped Children," *Exceptional Children*, 40:45-48, September, 1973.

Described are efforts made by the Office of Child Development (OCD) of HEW to implement the 1972 Amendments to the Economic Opportunity Act which ask that a least 10% of Head Start enrollment consist of handicapped preschool children. Summarized is the content of a session of the CEC Dallas Convention which dealt with this mandate. At the session 2 OCD people, Raymond Collins and Linda Randolph, "discussed the intent of the legislative mandate, implementation policies, and responded to questions from the audience."

186. Jouppila, P.; Koivisto, M.; and Suonio, S.: "Ethanol in the Prevention of Neonatal Hyperbilirubinaemia," *Acta Paediatrica Scandinavica*, 62:501-504, September, 1973.

A total of 93 pregnant women, whose delivery was to be induced for various reasons, were studied regarding the effect of ethanol on bilirubin values in the newborn. Of these 93 patients, 74 were divided into 4 treatment groups and received either ethanol orally or varying doses of ethanol intravenously on the day prior to induction. Thus, 19 patients served as controls and received no ethanol. The mean daily bilirubin values of the newborns in the ethanol-treated groups "were not significantly lower during the first six days of life compared with the controls." These findings are discussed and interpreted.

187. Junge, H.D.: "A New Disposable Electrode Model for Clinical Routine FHR Monitoring," *Journal of Perinatal Medicine*, 1:1:70-72, 1973.

This is described and pictured. "Production on a large scale has already started."

188. Kalbac, Richard W.; Newman, Robert L.; and Elliott, Joseph R.: "Clinical Application of the Amniotic Fluid Lecithin-Sphingomyelin Ratio," *Obstetrics and Gynecology*, 42:818-822, December, 1973.

Studied and compared in 58 amniotic fluid samples from 50 women were the following amniotic fluid parameters: the lecithin-sphingomyelin (L/S) ratio, the creatinine concentration, the optical density, and the percent of fetal cells staining orange with Nile blue sulfate. All methods and findings are described. "The lecithin-sphingomyelin ratio correlated most satisfactorily with gestational age and provided a reliable method of directly assessing fetal pulmonary maturity. Its greatest value lay in determination of the most opportune time for intervention in the high-risk gestation by minimizing the risk of prematurity."

189. Kandall, Stephen R.; Thaler, M. Michael; and Erickson, Robert P.: "Intestinal Development of Lysosomal and Microsomal Beta Glucuronidase and Bilirubin Uridine Diphosphoglucuronyl Transferase in Normal and Jaundiced Rats," *Journal of Pediatrics*, 82:1013-1019, June, 1973.

Beta glucuronidase is described as the enzyme that is concerned with the deconjugation of bilirubin, while bilirubin uridine diphospho (UDP)-glucuronyl transferase is described as the enzyme concerned with the reconjugation of bilirubin. The perinatal activity of these 2 enzymes was studied in the intestines of rats with all methods described. Results are presented with regard to the "perinatal development of intestinal beta glucuronidase and bilirubin UCP-glucuronyl transferase activity," the "development of beta glucuronidase and bilirubin UDP-glucuronyl transferase at weaning," and the "development of lysosomal and microsomal beta glucuronidase activities." These results are discussed and their implications are presented. "The present studies show that intestinal deconjugation is more active in newborn infants than in adults. Moreover, the capacity of the intestine for deconjugation far exceeds its capacity for conjugation with glucuronide during the perinatal period. Considered together, these findings indicate that conditions in the intestine of the newborn infant favor the active reabsorption of bilirubin. The intestinal phase of pigment transport may, therefore, contribute significantly to neonatal hyperbilirubinemia."

190. Kass, Edward H.: "The Role of Unsuspected Infection in the Etiology of Prematurity," *Clinical Obstetrics and Gynecology*, 16:134-152, March, 1973.

Two groups of unsuspected infections are discussed as being related to perinatal morbidity. These are bacteriuria of pregnancy and infection with genital mycoplasmas. On the basis of findings concerning these 2 groups, it is felt "that unsuspected infections may play a much larger role in the pathogenesis of prematurity than has been thought earlier, and this provides a hopeful approach to the control of excess perinatal morbidity."

191. Kearney, P.J.: "Mini Exchange Plasma Transfusion," *Archives of Disease in Childhood*, 48:236-237, March, 1973.

A case is reported in which such a transfusion was used. Necessary conditions are stated. "The infant must have an adequate Hb for the procedure, and a minimum level of 14 g/100 ml is suggested." Such a procedure is recommended in cases where there

is a delay in obtaining compatible blood for exchange transfusion. Such treatment may considerably reduce the risk of brain damage due to neonatal hyperbilirubinemia.

192. Keen, J.H., and Lee, D.: "Sequelae of Neonatal Convulsions," *Archives of Disease in Childhood*, 48:542-546, July, 1973.

A total of 112 infants who had experienced convulsions during the first 28 days of life were studied. The infants, their care, and the study methods are explained. Of the 112 infants, 105 survived the neonatal period. Follow-up methods are described, and results are presented with regard to those children having further convulsions, those having subsequent motor handicap, the developmental testing results, and the EEG results. "During follow-up of 83 (80%), 14 were detected as having motor handicap, a further convulsion, or an intelligence assessment below 85. In the 45 infants whose convulsions were associated only with hypocalcaemia, 2 had an intelligence assessment below 85 and 1 had a further convulsion, but none had evidence of motor handicap during the follow-up period." Results are discussed.

193. Khanna, J.L., ed.: *Brain Damage and Mental Retardation; A Psychological Evaluation.* 2nd ed. Springfield, Ill.: C.C. Thomas, 1973. 227 pp.

This is a revised and up-dated edition of a 1968 publication of the same title. It contains the papers (some revised) presented at an institute on the subject held at the University of Tennessee College of Medicine in February of 1966. Also included are summaries of discussions conducted concerning these papers. Titles of some of the papers and their authors are "Conceptual Issues in the Evaluation of Brain Damage" by Alan O. Ross; "Psychological Assess of Deficits Associated With Brain Lesions in Subjects With Normal and Subnormal Intelligence" by Ralph M. Reitan; "Poverty and the Brain" by Wallace A. Kennedy; "Intellectual Evaluation of Children With Major Sensory Deficit" by Jerry N. Boone; "The Role of Interpretive Parent Interview in Diagnosis of Children" by Wentworth Quast; and "Problems in Evaluation of Residual Effects of Head Injury" by Ray W. Mackey. Bibliographies follow papers and discussions.

194. Kirkpatrick, Stanley E.; Covell, James W.; and Friedman, William F.: "A New Technique for the Continuous Assessment of Fetal and Neonatal Cardiac Performance," *American Journal of Obstetrics and Gynecology*, 116:963-972, August 1, 1973.

Described is such a technique which was developed and employed utilizing pregnant ewes. Hemodynamic study was initiated after a 14-day recovery period from surgery. The technique allows for the continuous monitoring of "internal left ventricular dimensions and pressures in the fully recovered, intact, undisturbed fetus in utero or newborn lamb." Surgical and sonocardiometric methods are described. Results are presented on 26 studies "from 7 chronically instrumented fetal newborn lambs." "The methods described in this report were developed since they will allow calculations of left ventricular volume, ejection fraction, velocity of circumferential fiber shortening, myocardial pressure-volume relations, force-velocity relations, and peripheral resistance. Thus, valuable information may be anticipated concerning the manner in which the developing myocardium reacts to altered physiologic conditions, specific cardiovascular deformities created by in utero operation, prolonged and complicated labor and delivery, a variety of other neonatal abnormalities, and the administration of pharmacologic agents to the mother, fetus, and neonate."

195. Klaus, Marshall H., and Fanaroff, Avory A.: *Care of the High-Risk Infant.* Philadelphia: W.B. Saunders, 1973. 358 pp.

In the 16 chapters of this teaching volume many of the problems involved in the care of the high-risk neonate are discussed. Topics included are resuscitation, feeding, transportation, respiratory problems, chemical adaptation problems, neonatal hyperbilirubinemia, neonatal infections, cardiac and renal care, hematologic problems, and neurologic problems. Besides the 2 authors there are 18 other contributors. Three other authorities make frequent critical comments in areas of controversy. Questions are posed in each chapter to aid the reader in learning, and many case problems are presented to place the reader in an acutal patient care situation. Reference lists follow each chapter and a total of 37 appendices follow the text.

196. Kopelman, Arthur E.: "Cutaneous Absorption of Hexachlorophene in Low-Birth-Weight Infants," *Journal of Pediatrics*, 82:972-975, June, 1973.

Previous research on the toxicity of hexachlorophene is reviewed. Five low birth weight infants who had been bathed daily in a described hexachlorophene preparation for 3 weeks or more were studied. Described blood analysis showed hexachlorophene concentrations ranging "from 0.21 to 1.1 µg per milliliter, with a mean value of 0.482 µg per millileter." These values were not found to correlate with the birth weight or gestational age of the infants. "Although the infants did not have abnormal neurologic signs, the highest value was comparable to those reported in hexachlorophene-fed rats who developed edema and cystic changes of the cerebral white matter." These findings are discussed.

197. Kuhn, G.G.: "Individual Molded Seat-Shells for Severely Handicapped Persons," *Acta Orthopaedica Scandinavica*, 44:4:366-371, 1973.

The process whereby individually molded seat-shells are built for severely handicapped people is described. Several illustrations are included.

198. Kushinsky, Stanley: "Estriol and Creatinine in Pregnancy Urine," *Obstetrics and Gynecology*, 41:343-346, March, 1973.

With all methods explained in detail, estriol and creatinine levels were determined in the urine specimens of 5 women taken at frequent intervals during the last trimester of pregnancy as a means of fetal monitoring. Creatinine levels were determined in order "to evaluate the potential contribution of incomplete collections of urine to the enormous fluctuations in the daily excretion of estriol which invariably are found." The findings indicated "that creatinine provides a useful indicator of the completeness of a 24-hour collection of urine when using changes in excretion of estriol to monitor for potential fetal distress."

199. Kuzemko, J.A., and Paala, Josy: "Apnoeic Attacks in the Newborn Treated With Aminophylline," *Archives of Disease in Childhood*, 48:404-406, May, 1973.

Aminophylline was administered as described to 10 preterm infants suffering from RDS. The care of the babies and the results of the treatment are presented. Recurring

apneic attacks were found to cease or become "infrequent after administration of ampinophylline 5 mg suppositories at 6-hourly intervals." There were no observed side effects, and all but 1 of the infants survived.

200. Kynast, Geno, and Saling, Erich Z.: "Rapid Specific Determination of Amniotic Fluid Lecithins as a Test of Fetal Lung Maturity," *Journal of Perinatal Medicine*, 1:3:213-218, 1973.

A procedure for such a determination is described in detail. "The proposed method makes possible the direct, specific and quantitative determination of lecithins independently of other phospholipids. Lecithins are measured directly against standard lecithins. Problems of determining corresponding values of the content of lecithins from phosphorus are thus avoided. Blood or meconium contaminated samples can be examined without difficulty." This method along with other parameters can be used to ascertain the best time for delivery in high risk pregnancies where timing is of great clinical importance.

201. Latham, Glenn, and Hofmeister, Alan: "A Mediated Training Program for Parents of the Preschool Mentally Retarded," *Exceptional Children*, 39:472-473, March, 1973.

The advantages of such a program which would be conducted under the direction of such persons as a public health nurse or a social worker are listed. A program consisting of a 4 part slide-sound presentation on 4 areas of instruction, a workbook, and other instructional materials was developed. Forty sets of parents of mentally retarded and multiply handicapped preschoolers (ages 2 to 6 years) were assigned to either an experimental group, which received the training, or a control group. The children were pretested once and posttested 3 times in 8 basic skill areas. In a chart are presented the "significance levels of pre- and posttest differences for each skill area measured." "The results of this study tend to support the proposition that parents of preschool aged mentally retarded and multiply handicapped children can, in the absence of professionally trained special educators, be taught via a mediated training program to effectively teach their children basic self help skills."

202. "Lead-Poisoning Prevention in Massachusetts," *New England Journal of Medicine*, 289: 428-429, August 23, 1973.

A new lead-poisoning testing program, begun by the Department of Public Health in Massachusetts, is described. It "has two specific aims: to identify children who are at risk of being damaged by high blood lead levels, and to prevent future exposure to the hazards of lead by controlling the environment."

203. "A Leg Up Life's Ladder," *Medical World News*, 14:88-89, September 21, 1973.

Described is the work of Dr. Jaroslai Koch, a psychologist at the Institute for the Care of Mother and Child in Prague, Czechoslovakia. A study is reported in which 3 groups of male infants were investigated: 20 infants who stayed at the Institute for 6 months where an early-exercise program was conducted, 30 infants who lived at home but participated in early exercise conducted by their mothers, and 50 control infants in no special program. All infants were tested every 3 months, and those in the 2 early stimulation groups were found to be "far ahead of the controls in level of learning." Other benefits are described. Clinicians who work with handicapped children have been interested in the work at the Institute.

204. Leiberman, A.; Sohmer, H.; and Szabo, G.: "Cochlear Audiometry (Electro-Cochleography) During the Neonatal Period," *Developmental Medicine and Child Neurology*, 15:8-13, February, 1973.

The early detection of hearing loss by means of behavioral tests and reasons for dissatisfaction with this method of detection are explained. Then described is a study in which the more objective method of "cochlear audiometry" was used to examine the hearing of 19 normal newborns in order to determine if this method is feasible for use in the neonatal period. The technique used and the recording and analysis of responses are explained. Typical results and a case report are presented. "It has been shown in this study that the cochlear audiometry technique can be used with new-born babies and that there is a basis for believing that it can give an earlier more objective and more quantitative indication of hearing loss than can conventional behavioural techniques. However, this belief must be confirmed by the long-term

studies on a group of infants which includes those with a high risk of hearing impairment and which uses both behavioural and cochlear audiometry techniques."

205. Lemons, James A., and Jaffe, Robert B.: "Amniotic Fluid Lecithin/Sphingomyelin Ratio in the Diagnosis of Hyaline Membrane Disease," *American Journal of Obstetrics and Gynecology*, 115:233-237, January 15, 1973.

A total of 130 amniotic fluid samples were obtained from 93 described women at between 28 to 43 weeks of gestation in order to determine L/S ratios and to correlate these ratios with subsequent neonatal course. The final sample was obtained within 6 days of delivery in all of the women. From these 93 pregnancies, 95 infants were born (1 case of triplets). Ten of the 95 infants developed hyaline membrane disease. Findings indicated that the L/S ratio was an accurate reflection of the fetal lung maturity in 91 of the 95 infants. "Thus, whether or not hyaline membrane disease will occur at a given time during gestation can be predicted. However, preliminary evidence suggests that the L/S determinations should be viewed with caution in predicting lung maturity of fetuses following intrauterine transfusion and in those pregnancies complicated by maternal diabetes mellitus." The correct prediction of fetal lung maturity by the L/S ratio in each of the triplets is discussed.

206. Lennox-Buchthal, Margaret A.: *Febrile Convulsions; A Reapprasial*. Amsterdam: Elsevier Publishing Co., 1973. 138 pp. (Electroencephalography and Clinical Neurophysiology, Supplement No. 32.)

"This monograph is an attempt critically to assess the phenomena of and notions about febrile convulsions." The subject is first considered on an historical basis. Then described is the incidence of febrile convulsions in normal children and in sick children. The term, febrile convulsions, is defined, and a typical case is presented. Much attention is given to "the FC syndrome" with the convulsion itself being explained followed by consideration of the accompaning fever, the age factor, the inheritance factor, sex, the infective age, related factors in severe convulsions, and "other conditions thay may effect febrile convulsions." Electroencephalographic aspects, prognosis, prevention, and treatment are also discussed. Data is summarized, and references are listed in final chapters. Many studies are referred to throughout the book.

207. Leon, Juan: "High-Risk Pregnancy: Graphic Representation of the Maternal and Fetal Risks," *American Journal of Obstetrics and Gynecology*, 117:497-504, October 15, 1973.

Presented and described in detail is a circular diagram in which an attempt is made to display the major factors of high-risk that occur previous to pregnancy, prenatally, during labor and delivery, neonatally, and postnatally. A blank area in the circle is reserved for a description of the infant's condition at birth and for neonatal pathology. This diagram is an attempt to summarize histories, aid in the identification of the high-risk pregnancy and fetus, and allow for the prompt recognition of factors in a pregnancy that necessitate monitoring and/or intervention. An important part of the diagram is devoted to the high-risk neonate. Comment is made on the use of the diagram in 27 cases. It is felt that the diagram "contributes to the reduction of the perinatal morbidity and mortality rates, especially of permanent central nervous system damage."

208. Levett, L.M.: "A Method of Communication for Non-Speaking Severely Subnormal Children - Trial Results," *British Journal of Disorders of Communication*, 6:125-128, October, 1971.

A system of mime was developed for use in communicating with severely subnormal, cerebral palsied children at the Meldreth Training School of The Spastics Society. In this article are described the findings from a trial period of usage, the advantages, and the problems incurred with the system. The system was taught to 12 described children. "To summarise: Of the twelve children - 12 understand what is wanted when the mime they have been taught is used with them, 7 use it spontaneously to communicate, 3 use it in a limited way, 2 do not use it effectively." There have been noticeable social and managèrial benefits.

209. Levi, S., and Smets, P.: "Intra-Uterine Fetal Growth Studied by Ultrasonic Biparietal Measurements," *Acta Obstetricia et Gynecologica Scandinavica*, 52:3:193-198, 1973.

In an effort to establish the range of the fetal biparietal diameter (B.P.D.) at various stages of gestation, a total of 3,032 fetal B.P.D. measurements were obtained from 1,011 patients at between the gestational ages of 15 to 43 weeks. The ultrasonic techniques and the computation methods used are described. "The distribution of these values, the mean weekly increments, together with the 5th to 95th percentiles are presented in tabular and graphic forms. The mean values correspond to those quoted in other investigations." The results are discussed, and the clinical uses of such graphs and curves are explained.

210. Levitt, Sophie, and Miller, Carol: "The Inter-relationship of Speech Therapy and Physiotherapy in Children With Neurodevelopmental Disorders," *Developmental Medicine and Child Neurology*, 15:188-193, April, 1973.

The concern of this article is the need for integration between physiotherapy and speech therapy in the treatment of neurodevelopmental disorders in children. Head control, sitting, standing, other postures, and abnormal reflexes are explained as being aspects of motor behavior which are "particularly relevant to speech therapy and can be improved during therapy," Opportunities in physiotherapy where it is possible to involve speech therapy are also discussed. The physiotherapist must have knowledge of hearing development, language development, and articulation and be able to implement this knowledge to aid the child in these areas during physiotherapy. Examples are provided. The advantages of group treatment and parental involvement are considered.

211. Lewis, M.: "Infant Intelligence Tests: Their Use and Misuse," *Human Development*, 16:108-118, 1973.

Data, reviewed from several infant intelligence tests, lead to 4 stated conclusions concerning the inconsistency and unpredictability of infant intelligence as measured by such tests. The current uses of infant test scores and the function of IQ scores in our technilogical society are discussed. An alternative theoretical approach is then presented "which is related to the acquisition of specific skills, the learning of which is dependent upon the match between the subject and the nature of the learning experience." The implications of this "interactionalist approach" for infant intervention programs are considered.

212. Lewis, Michael, and McGurk, Harry: "Evaluation of Infant Intelligence," *Science*, 178:1174-1177, December 15, 1972.

Findings by others that infant intelligence tests have little predictive validity are reviewed. "Infant intelligence scales are invalid as measures of future potential; the necessity for caution in this respect cannot be overstressed." A study by the authors is reported in which the mental scale of the Bayley Scales of Infant Development and the object permanence scale of the Scales of Sensori-Motor Development of Escalona and Corman were administered to approximately 20 infants at regular intervals to 24 months of age. Also at age 24 months the infants were tested for language comprehension and production tasks, using the Peabody Picture Vocabulary Test. Intercorrelations found among test scores on the same test at different ages and among test scores on different tests at the same and at different ages are presented as are the resultant conclusions. "All in all, these findings cast serious doubt on the notion that the concept of general intelligence is applicable to the period of infancy." "Our data also cast doubt on the notion that scores on infant intelligence scales can be generalized beyond the particular set of abilities, or factors, sampled by the items administered at the time of testing." Implications for the use of infant intelligence tests to evaluate infant intervention programs are discussed.

213. Lindberg, Bo S., and Nilsson, Bo A.: "Human Placental Lactogen (HPL) Levels in Abnormal Pregnancies," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:1046-1053, December, 1973.

Rapid radioimmunoassay was used to measure plasma HPL levels in a total of 209 described obstetric patients with pre-eclampsia, rhesus isoimmunization, diabetes, or retarded intrauterine fetal growth. Values were compared to normal values for maternal plasma HPL. The pre-eclamptic patients had mean HPL levels lower than normal, and those having severe pre-eclampsia had lower levels than did those having mild pre-eclampsia. "Infants of mothers with pre-eclampsia and plasma HPL values below 4.0 μg/ml had a high perinatal mortality, and a high incidence of low birthweights and low Apgar scores." Low mean HPL values were found in all mothers with intrauterine fetal growth retardation while those with diabetes and rhesus isoimmunization had normal values. "However, in patients who had a stilbirth due to severe rhesus isoimmunization a very sharp rise in plasma HPL values occurred before death of the fetus." Findings are discussed and compared to those of other studies.

214. Lindberg, Bo S., and Nilsson, Bo A.: "Variations in Maternal Plasma Levels of Human Placental Lactogen (HPL) in Normal Pregnancy and Labour," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:619-626, July, 1973.

Plasma HPL levels were measured with a rapid radioimmunoassay during normal pregnancy from the 22nd week in 2 groups of women as described. Circadian variations, short-term variations, fluctuations during labor, and the influence of physical exercise on the plasma HPL levels were among the factors studied. Methods are described, and the radioimmunoassay used is explained. The HPL levels were found to increase steadily from the 22nd week, peak at the 37th week, and then gradually decrease. During short periods of sampling significant fluctuations in levels occurred. Fluctuations were also noted during labor, "but these were of the same magnitude as those during the later part of normal pregnancy." Strenuous physical exercise in late pregnancy was not found to significantly affect HPL levels. These results are discussed.

215. Lindheim, Roslyn; Glaser, Helen H.; and Coffin, Christie: *Changing Hospital Environments for Children.* Cambridge, Mass.: Harvard University Press, 1972. 206 pp.

This book was written by those who were involved in the design and program implementation of the new Children's Hospital at Stanford. Many photographs of this hospital and life within it are included. After the authors have explored "alternatives to hospitalization" for children and methods to be used in hospital design to stimulate positive relations between the hospital and the community, they present and discuss guidelines to establishing hospital environments that meet the specific needs of infants, toddlers and preschoolers, grade school children, and adolescents. The distinctive characteristics and developmental needs of each of these age groups are recognized. The needs in the hospital environment of parents and the staff are also considered with an individual chapter devoted to the nursing unit design. "Design Guidelines" are listed in strategic places throughout the book, and numerous specific architectural plans are presented. There are 3 appendices and several pages of notes which include references.

216. Lin-Fu, Jane S.: "Preventing Lead Poisoning in Children," *Children Today*, 2:2-6+, January-February, 1973.

Federal actions in this area are reviewed, the importance of preventive measures is discussed, sources of lead are described, and several steps needed to be taken in order to conquer childhood lead poisoning are listed.

217. Lin-Fu, Jane S.: "Vulnerability of Children to Lead Exposure and Toxicity; First of Two Parts," *New England Journal of Medicine*, 289:1229-1233, December 6, 1973.

Work in this area is historically reviewed, and recent findings are reported. The following sources of childhood lead exposure are then individually discussed: lead-based paint, dust and dirt, ambient air, and other miscellaneous sources.

218. Lin-Fu, Jane S.: "Vulnerability of Children to Lead Exposure and Toxicity; Second of Two Parts," *New England Journal of Medicine*, 289:1289-1293, December 13, 1973.

In part 2 of this article possible means of childhood lead ingestion and absorption are discussed. These include pica, normal childhood hand-to-mouth activity, and gastrointestinal absorption. Studies concerned with the increase in toxic effects which lead may have when nutritional inadequacies are present are then considered. Such effects when iron deficiency, protein deficiency, and calcium deficiency are present are specifically reviewed. The vulnerability of the immature organism to the toxicity of lead is discussed, and conclusions are presented. Numerous studies are referred to throughout both parts of the article.

219. Lipshaw, Leon A.; Weinberg, Jerrold H.; Sherman, Alfred I.; and Foa, Piero P.: "A Rapid Method for Measuring the Lecithin-Sphingomyelin Ratio in Amniotic Fluid," *Obstetrics and Gynecology*, 42:93-98, July, 1973.

Such a method is described in detail. "The analysis can be completed in less than 45 minutes, and requires not more than 1.0 ml of amniotic fluid, simple equipment and minimal technical skill. The surface active lipids of the amniotic fluid are chromatographed on microscope slides coated with silica gel and the lecithin to sphingomyelin

is estimated after charring on a hot plate." The method was compared to the 'long' procedure of Gluck and Kulovich, and evidence is presented to confirm the validity of the 'short' method of predicting fetal lung maturity. The advantages of the 'short' procedure are listed.

220. Loring, James: "Twenty One Years in Education," *Special Education*, 62:31-33, September, 1973.

The director of The Spastics Society describes the educational role for cerebral palsied children that the Society has played for the past 21 years. Also considered are suggestions for future development in the areas of treatment and education. The author feels future emphasis should be placed in 2 areas: "One is the need to overcome the communication barriers of cerebral palsied children with little or no speech; the other is to improve the physical functioning of the child as much as possible, often by intensive therapy in the early years." The problem of and the need for integration of teaching and therapy is also considered.

221. Lovell, Linda M.: "The Yeovil Opportunity Group: A Play Group for Multiply Handicapped Children," *Physiotherapy*, 59:251-253, August, 1973.

This group of 25 children, ages 6 months to 5 years, is described with regard to its formation in 1969, its make-up, referrals, activities of the group, physiotherapy in the group, and parental involvement.

222. Low, J.A.; Galbraith, R.S.; and Boston, R.W.: "Maternal Urinary Estrogen Patterns in Intrauterine Growth Retardation," *Obstetrics and Gynecology*, 42:325-329, September, 1973.

The value of maternal urinary estrogen determinations in the antenatal diagnosis of intrauterine growth retardation (IUGR) was studied in a group of 486 patients of whom 63 had IUGR infants. Each infant was classified into 1 of 4 weight-gestational age quartiles. Maternal urinary estrogen estimations were serially performed and a maternal urinary estrogen index was calculated as described. Findings indicated that "an intrauterine growth retardation infant may be present if the maternal estrogen index is less than 70% and the probability increases as the maternal estrogen index decreases to 30%, when probability is about 96%."

223. Lubs, Marie-Louise E.: "Racial Differences in Maternal Smoking Effects on the Newborn Infant," *American Journal of Obstetrics and Gynecology*, 115:66-76, January 1, 1973.

Previous research in this area is reviewed. Described is an investigation conducted at Yale on a group of infants about whom much medical and sociological information had been collected. The group was followed to age 1 year. The study was an attempt to determine any racial differences between maternal smoking and the effects it has on the infant. "Prematurity was defined in three ways: low birth weight, short gestation, and clinically defined prematurity." A total of 3,415 Caucasian and 783 Negro infants were included. Information is presented on the methods of study and the characteristics of the infants. Much resulting information is given in graphs and charts. These findings are discussed, and conclusions are offered. A significant

relationship was found between the amount of maternal smoking and the incidence of both low-birth-weight babies and clinically premature babies. Maternal smoking was also found to be associated with certain neonatal complications, such as low Apgar score and the need for treatment in a neonatal special care unit, and certain maternal complications, such as bleeding and anemia. "There was a significant racial difference in the strength of the association between smoking and prematurity. The group who smoked the most in Negroes showed a five-fold increase in the frequency of clinically premature infants over nonsmoking Negro mothers whereas the increase in the prematurity rate in Caucasians among heavy smokers was 2.3 times higher than in Caucasian nonsmokers. The influence of socioeconomic factors on the prematurity rate was found to be comparatively smaller than the effects of both smoking and race."

224. Lucey, Jerold F.: "The Effects of Light on the Newly Born Infant," *Journal of Perinatal Medicine*, 1:3:147-152, 1973.

In this review article Dr. Lucey discussed the 'normal' present lighting conditions in newborn nurseries, the present uses of phototherapy, and the concerns which have arisen regarding phototherapy. Also considered are the effects of light phototherapy on bilirubin metabolism, on skin blood flow, and on insensible water loss. "Promising new uses of light" are described, and many studies are referred to throughout the article.

225. Lucey, Jerold F.: "Why We Should Regionalize Perinatal Care," *Pediatrics*, 52:488-491, October, 1973.

In this "Commentary" the "ideal center" is briefly described, and problems involved in the regionalization of perinatal care are discussed. These problems must be weighed against the advantages of regionalization. Two questions are posed and answered in support of regionalization: '"Are such centers effective in lowering perinatal mortality rates?"' and '"Are the infants who survive intellectually intact?"'

226. Lundy, Lawrence E.; Wu, Chung-Hsiu; and Lee, Si Gaph: "Estrogen Assessments in the High-Risk Pregnancy," *Clinical Obstetrics and Gynecology*, 16:279-297, March, 1973.

Ovarian, placental, and fetal steroidogenesis are explained. Then considered is the obtaining of the maternal blood, urine, or anmiotic fluid sample for evaluating estrogen levels during pregnancy and the laboratory procedure involved. Problems that occur in estrogen assays are discussed as are estriol levels in normal pregnancy and the clinical application of estrogen assessments in high-risk pregnancy. The usefulness of evaluating estrogen levels in cases of prematurity, toxemia, placental insufficiency, and diabetes mellitus is described. It is concluded that "the prospective assessment of urinary estrogen in high-risk pregnancy has its greater value in situations of chronic rather than acute distress."

227. Luther, E.R.; MacLeod, S.C.; and Langan, M.J.: "The Value of Single-Specimen Estriol/Creatinine Determinations During Pregnancy," *American Journal of Obstetrics and Gynecology*, 116:9-14, May 1, 1973.

Previous research and problems in this area of assessing fetoplacental well-being are discussed. "The estriol/creatinine (E/C) ratio of early morning, single voided specimens were compared with the E/C ratios of simultaneously collected 24 hour samples" in

40 high-risk obstetric patients. Methods of analysis are described. A correlation coefficient of 0.78 was found. "The correlation was found to be satisfactory enough to make this a useful and reliable means of assessing and following high-risk pregnancies in certain means of assessing and following high-risk pregnancies in certain circumstances."

228. McAllister, Charles John; Stull, Carol G.; Courey, Norman G.: "Amniotic Fluid Levels of Uric Acid and Creatinine in Toxemic Patients - Possible Relation to Diuretic Use," *American Journal of Obstetrics and Gynecology*, 115:560-563, February 15, 1973.

Amniotic fluid samples were obtained near term from 10 pre-eclamptic women on diuretic therapy, 9 control patients on diuretic therapy, and 10 control patients not on diuretic therapy. Uric acid and creatinine levels in these samples were then determined. Both uric acid and creatinine levels were found to be significantly higher in both the pre-eclamptic group and the control group receiving diuretic therapy. These results are discussed, and conclusions are presented. "The potential harmful effects of these elevated levels on the fetus should be considered. Therapy should be re-evaluated in this light, and the almost routine prescribing of thiazide diuretics should be reconsidered."

229. McConnell, J.B.; Glasgow, J.F.T.; and McNair, R.: "Effect on Neonatal Jaundice of Oestrogens and Progestogens Taken Before and After Conception," *British Medical Journal*, 3:605-607, September 22, 1973.

Five groups of healthy newborns were studied regarding their plasma bilirubin levels on days 3 and 5 of life: 1) babies who were bottle fed, 2) babies who were breast fed, 3) babies whose mothers had taken a contraceptive pill and who were bottle fed, 4) babies whose mothers had taken a contraceptive pill and who were breast fed, and 5) babies whose mothers had been given progestogen therapy during early pregnancy. Findings showed "that among bottle-fed infants the mean plasma bilirubin concentration was slightly but significantly higher ($P < 0.01$) in those whose mothers had previously used steroid contraceptives." "A similar finding was not noted among breast-fed infants." The mean plasma bilirubin concentration of the group of 16 infants whose mothers had been given progestogen therapy was found to be significantly higher than any of the other 4 groups. Results are discussed.

230. McDonald, Eugene T., and Schultz, Adeline R.: "Communication Boards for Cerebral-Palsied Children," *Journal of Speech and Hearing Disorders*, 38:73-88, February, 1973.

The experience of the authors with such boards is described. The cerebral palsied child often is subject to many difficulties and frustrations involving speech, but with the early use of language boards these problems can be minimized. The need to develop a language board for each individual child that takes into account his physical and intellectual abilities is explained as are the various types of communication boards, such as picture boards, word and phrase boards, boards for sentence construction, and board variations for children with limitations in physical ability. In-service training for those working with the children and the boards is necessary. A case report is presented of a six-year-old cerebral palsied boy who greatly benefitted from the use of language boards. "The language board facilitates social interactions, language development, and organization of thought and ideas. It gives the child an effective means of expressing himself, lessening communicative tension so that more vocalizations take place. Most important of all, it reduces the frustration felt by the child and those in his environment. He becomes self-actualizing and responsive within the limits of his handicap."

231. McFee, John G.: "Anemia: A High-Risk Complication of Pregnancy," *Clinical Obstetrics and Gynecology*, 16:153-171, March, 1973.

Anemia as a high-risk factor in pregnancy is discussed in relation to its incidence; its effects on the mother; its effects on the fetus, including low birth weight and intrauterine hypoxia; its etiology in pregnancy; and the diagnosis and treatment of gestational anemia.

232. MacKeith, Ronald: "The Feelings and Behaviour of Parents of Handicapped Children," *Developmental Medicine and Child Neurology*, 15:524-527, August, 1973.

In this brief "annotation" Dr. MacKeith discusses the feelings and behavior of parents of handicapped children and the feelings and behavior of the professional people involved with the handicapped child. Also considered are the question of sending the child away from home, the crisis periods which occur as the handicapped child grows, and the need for support for the parents.

233. MacKintosh, T.F., and Walker, C.H.M.: "Blood Viscosity in the Newborn," *Archives of Disease in Childhood*, 48:547-553, July, 1973.

Reported are the methods used and results obtained in a study designed to first, examine the reported relationship between packed cell volume (PCV) and blood viscosity in the neonate, "second to determine whether hyperviscous states could occur and cause symptoms, and third to see whether haemodilution could influence the clinical state of the infant." A total of 188 newborns were studied of whom 110 were considered normal, 21 were normal preterm, 13 were small-for-dates, 20 had RDS, and 24 showed "cerebral signs" as described. Among the findings was the fact that 13 of the 24 infants showing cerebral signs had viscosity values above the normal 2 standard deviation limit. A total of 19 infants were found to be hyperviscous, and their treatment is described. Of the 6 infants who received hemodilution therapy by partial plasma exchange as described, 5 showed clinical improvement. The results are discussed with emphasis placed on the "possible importance of viscosity in clinical syndromes." "It is concluded that haemodilution should be considered in any infant with cardiopulmonary or cerebral symptoms and in whom the haematocrit is above 65 to 70%."

234. McNeil, James R.: "The Possible Teratogenic Effect of Salicylates on the Developing Fetus," *Clinical Pediatrics*, 12:347-350, June, 1973.

Eight case histories are briefly presented to illustrate this possible effect.

235. Mandelbaum, Bernardo: "Gestational Meconium in the High-Risk Pregnancy," *Obstetrics and Gynecology*, 42:87-92, July, 1973.

Previous studies are reviewed. A total of 392 amniocenteses were performed on 272 high-risk obstetric cases. The presence or absence of meconium and fetal maturity were determined. Some 31 cases (11.3%) showed meconium. Of these 31 cases, "8 (25.8%) were associated with fetal death, 10 (32.2%) resulted in normal newborns, and 13 (41.9%) developed neonatal complications." There were no fetal deaths when pregnancy was interrupted shortly after meconium appeared. "Gestational meconium in a high-risk pregnancy is significant of chronic fetal distress. Serial amniocentesis and prompt delivery in the event of the appearance of gestational meconium or the determination of fetal maturity resulted in decreased fetal mortality."

236. Mann, Leon I.; Duchin, Sybil; Halverstram, John; Mastrantonio, John; Weiss, Robert; and Schulman, John: "The Effect of Hypoglycemia on Fetal Brain Function and Metabolism," *American Journal of Obstetrics and Gynecology*, 117:45-50, September 1, 1973.

Fetal brain metabolism and brain function during hypoglycemia were studied in 11 in utero fetal sheep. Methods are described, and hypoglycemia was induced by infusing insulin to the ewe. The concentration of glucose in the fetal carotid artery was seen to decrease markedly with the maximum effect noted at between 30 and 50 minutes after the infusion. Oxygen tension was also significantly reduced in the carotid artery during the hypoglycemia. No consistent significant changes in the fetal EEG were noted, but there was a significant reduction in the fetal heart rate. Regarding changes seen in the cerebral metabolism, there were significant reductions "in the arteriovenous difference of both glucose and glucose consumption" and in the glucose-oxygen ratio. "There was no significant difference in the metabolism of lactate, pyruvate, and free fatty acids which suggests other undefined substrate utilization during hypoglycemia." Findings are discussed.

237. Marx, Marion: "Integrating Physical Therapy Into a Cerebral Palsy Early Education Program," *Physical Therapy*, 53:512-514, May, 1973.

Described is the program at United Cerebral Palsy of Manhattan that is designed for cerebral palsied children ages 3 to 6 years. In this program an attempt is made to provide all ancillary services, including physical therapy, to the children within the classroom setting. Thus the professionals providing these services either actively participate in the classroom or instruct the teachers in methods of providing these services. Explained are methods used by the physical therapist to position the children and stimulate movement, to instruct the children in self-care skills, and to aid learning in perceptual areas.

238. Masson, Gordon M.: "Plasma Estriol in Normal and Preeclamptic Multiple Pregnancies," *Obstetrics and Gynecology*, 42:568-573, October, 1973.

In order to determine the normal range of plasma estriol levels in twin pregnancy and to determine whether fetoplacental function is indicated by serial plasma estriol values in preeclamptic multiple pregnancy, plasma estriol values were measured serially in 5 patients with uncomplicated twin pregnancy, 4 patients with twin pregnancy complicated by proteinuric preeclamptic toxemia, and 1 patient with triplet pregnancy complicated by proteinuric preeclampsia. Findings are presented, and on the basis

of the results "it is suggested that plasma estriol estimations are a better measure of fetoplacental function than urinary assays in normal and abnormal multiple pregnancy."

239. Masson, Gordon M.: "Plasma Oestriol in Pre-eclampsia," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:206-209, March, 1973.

Plasma estriol concentrations were determined serially as described in 14 cases of mild pre-eclampsia and in 10 cases of severe pre-eclampsia. Values were compared to those of normal patients, and comparative curves are presented. "Plasma oestriol values were abnormal in patients with pre-eclampsia, particularly if the condition was severe." The use of urinary estriol excretion and plasma estriol concentration for assessment of fetal condition in pre-eclamptic patients is discussed.

240. Masson, Gordon M.: "Plasma Oestriol in Pregnancy Complicated by Essential Hypertension," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:712-717, August, 1973.

Plasma estriol concentrations were serially measured in 5 patients with hypertension, as defined. All patients were receiving methyldopa as treatment for the hypertension. Characteristics of those 5 patients were compared to those of 25 normotensive patients who had been serially studied by the author "to determine normal plasma oestriol values during normal pregnancy." In the 5 hypertensive patients "a significant negative correlation was demonstrated between the percentage change in diastolic blood pressure and the change in plasma oestriol concentration." The results are discussed, and "it is suggested that antihypertensive therapy leads to improved fetoplacental function."

241. Masson, Gordon M.: "Plasma Oestriol in Retarded Intrauterine Fetal Growth," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:423-428, May, 1973.

Serial plasma estriol determinations were conducted on "a group of patients considered to have intrauterine fetal growth retardation." Four groups of patients were differentiated and are described. Graphs demonstrate the results with each group. Of the 4 women who developed hypertension and delivered low birth weight babies, all had lower plasma estriol levels than did the normal women. Of the 9 women who were normotensive but delivered low birth weight infants, 7 "had a different form of abnormal curve" with their plasma estriol levels being "intermediate in value between those in normal pregnancy and those in hypertensive pregnancy with low birthweight infants."

242. Masson, Gordon M., and Sutherland, Hamish W.: "Plasma Oestriol in Pregnancy Complicated by Diabetes Mellitus," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:536-541, June, 1973.

In order to investigate the value of serial plasma estriol levels as measures of fetal wellbeing in cases of pregnancy complicated by controlled diabetes mellitus, such concentrations were determined in 9 pregnant women who were insulin-dependent diabetics. Values from this group were compared with those from a group of 25 normal, non-diabetic pregnant patients. Although the plasma estriol values were found to be

lower in the diabetic cases, the curve formed by the values were similar in shape to that derived from the uncomplicated, non-diabetic cases. Previous research is reviewed, and the results are discussed. "It is suggested that serial plasma oestriol determinations in assessing feto-placental function in diabetic pregnancy should be interpreted with caution."

243. Mathur, R.S.; Chestnut, S.K.; Leaming, A.B.; and Williamson, H.O.: "Application of Plasma Estriol Estimations in the Management of High-Risk Pregnancies," *American Journal of Obstetrics and Gynecology*, 117:210-219, September 15, 1973.

Studied during the third trimester of pregnancy with regard to serial plasma estriol levels were 51 women having uncomplicated pregnancies, 19 pre-eclamptic women, 18 hypertensive women, and 21 diabetic women. Urinary estriol levels were also determined in 13 of the uncomplicated pregnancies, 16 of the toxemic patients, and 4 of the diabetic patients. Methods are described. "Highly significant correlation was observed between plasma and urinary estriol levels in both uncomplicated and complicated pregnancies." From the 34th week of pregnancy to term, plasma estriol levels in the diabetic and pre-eclamptic patients did not differ significantly from the levels of the uncomplicated patients, but in the hypertensive patients the levels were significantly lower. Based on the findings of this study, a clinical scheme was devised for using plasma estriol patterns to estimate fetal status from the 36th week of pregnancy to term. "Levels of less than 5 µg per 100 ml of plasma in this period are not compatible with a living fetus; values of less than 10 µg per 100 ml with a dropping estriol pattern are indicitive of fetal distress." A table demonstrating the proposed scheme is included, and the plan is explained. Further discussion by other physicians is conducted after the text of the article.

244. Mathur, R.S.; Leaming, A.B.; and Williamson, H.S.: "An Assessment of 'Free' and Conjugated Estriol in Uncomplicated and Complicated Pregnancy Plasma," *American Journal of Obstetrics and Gynecology*, 117:316-320, October 1, 1973.

'Free' and conjugated estriol levels were determined in serial plasma samples obtained during the last trimester of pregnancy from 15 women having normal pregnancies, 14 women with pre-eclampsia, and 1 woman with hypertensive vascular disease. Methods of estimating the 'free' and the conjugated estriol are described. Findings indicate that "the over-all pattern of 'free' and conjugated estriol in normal and toxemic pregnancies appears to be essentially the same."

245. Matthews, W.B.; Rushworth, G.; and Wakefield, G.S.: "Dimethothiazine in Spasticity," *Acta Neurologica Scandinavica*, 48:635-644, 1972.

In this study a preliminary investigation was conducted followed by a therapeutic uncontrolled trial in which dimethothiazine was orally administered in 2 doses daily of varying amounts to 42 adult patients with spasticity caused by either spinal or cerebral lesions. Reduction in spasticity was measured according to a described scale. Findings, including the resultant adverse effects, are presented. "Spasticity was reduced in 30 and markedly reduced in 15 of the 30 patients. In 20 patients some functional benefit was apparent. The use of the drug was, however, limited by the effects of prolonged high-dosage medication with a phenothiazine derivative and by the release of flexor spasm."

246. Maurer, Harold M.; Shumway, Clare N.; Draper, David A.; and Hossaini, Ali A.: "Controlled Trial Comparing Agar, Intermittent Phototherapy, and Continuous Phototherapy for Reducing Neonatal Hyperbilirubinemia," *Journal of Pediatrics*, 83:73-76, January, 1973.

In order to determine if intermittent phototherapy is as effective in treating low birth weight infants with neonatal hyperbilirubinemia as is continuous phototherapy and also to determine the therapeutic value of agar in neonatal hyperbilirubinemia, 4 groups of low birth weight infants, all of whom were less than 24 hours old, were studied. Group 1 was fed formula supplemented with agar (17 infants). Group 2 received intermittent phototherapy (18 infants). Group 3 received continuous phototherapy (19 infants). Group 4 was a control group and received no therapy (15 infants). All treatment lasted 4 days, and methods are described. Group 3 infants had significantly lower mean serum bilirubin levels from the second day than did any of the other groups. Concentrations in Group 1 and Group 2 infants did not differ significantly from Group 4 infants except on the fourth day. Results are discussed.

247. Melish, Marian E., and Hanshaw, James B.: "Congenital Cytomegalovirus Infection," *American Journal of Diseases of Children*, 126:190-194, August, 1973.

By using 2 described routine screening methods, cytomegalovirus (CMV) infection was detected in a total of 22 of 3,808 neonates screened. Using a urine culture survey of 1,963 specimens, 20 were found to be positive. The maternal characteristics of these 20 cases, the characteristics of these viruric infants at birth, and data on their follow-up are described. "One child had moderately severe sensorineural hearing loss, one may have minimal brain damage, and a third has slow development following permature birth." These 3 cases are presented. Using a cord serum survey of 1,846 samples, 2 infants were found to be excreting the virus. Both were deaf and developmentally retarded at follow-up. Their cases are presented. "All 22 infected infants detected by both methods have had persistent viruria, although antibody levels declined in 16 and became undetectable in ten. Only one infant had symptoms suggestive of CMV infection in the newborn period." Findings are discussed.

248. Meloni, Tullio; Cagnazzo, Giorgio; Dore, Angelo; and Cutillo, Stefano: "Phenobarbital for Prevention of Hyperbilirubinemia in Glucose-6-Phosphate Dehydrogenase - Deficient Newborn Infants," *Journal of Pediatrics*, 82:1048-1051, June, 1973.

A total of 66 infants with erythrocyte glucose-6-phosphate dehydrogenase deficiency were studied at Sassari University in Sassari, Italy. Of these 66 infants, 33 were given phenobarbital as described from age 1 day to age 5 days, while the other 33 infants received no treatment (controls). Findings indicated that "prophylactic treatment with barbituric acid has proved effective in preventing severe hyperbilirubinemia in G-6-PD-deficient newborn infants." Exchange transfusion was necessary in 11 of the 33 controls and in only 2 of the 33 treated infants. Hemoglobin and hematocrit studies showed "no evidence of severe hemolysis" in these infants.

249. Mennuti, Michael T.; Branca, Paul; and Schwarz, Richard H.: "Amniotic Fluid Evaluation After Intrauterine Transfusion," *Obstetrics and Gynecology*, 42:823-826, December, 1973.

Two case reports are presented to suggest that serial amniotic fluid studies (ΔOD_{450} measurements) after intrauterine transfusion "may be of value in assessing prognosis and perhaps in the timing of subsequent intrauterine transfusions and of delivery."

250. Mermut, Saim; Katayama, K. Paul; Del Castillo, René; and Jones, Howard W., Jr.: "The Effect of Ultrasound on Human Chromosomes In Vitro," *Obstetrics and Gynecology*, 41: 4-6, January, 1973.

Usage of ultrasound in obstetrics and gynecology is reviewed. In this described controlled study when 4 cultures of fetal umbilical cord blood and 2 cultures of human adult lymphocytes were exposed to ultrasound as explained for the entire incubation period of from 3 to 4 days, it was found that "both test and control groups of cells showed minimal damage, but that of the test cells was not significantly greater than that of control cells."

251. Merrett, J.D., and Hunter, R.J.: "Serum Heat Stable Alkaline Phosphatase Levels in Normal and Abnormal Pregnancies," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:957-965, November, 1973.

A group of 619 normal (as defined) pergnant women were studied with regard to their serum heat stable alkaline phosphatase (HSAP) levels during pregnancy. A regression equation was then derived "to predict HSAP level from period of gestation and to determine the effects of age, parity, ABO blood group and rhesus factor on the HSAP level." A group of 676 abnormal (as defined) pregnant women were also studied, with use of this derived equation, regarding their HSAP levels during pregnancy. The results from both groups of patients are described and discussed. Conclusions are presented. With regard to the abnormal group, "in many instances a significantly raised HSAP level has been observed before the onset of pre-eclampsia and where a patient delivers a low birthweight infant." "The results also suggest, but less reliably because of the small numbers of patients studied, that significantly raised HSAP readings are also associated with a history of unexplained stillbirth, accidental haemorrhage, second trimester threatened abortion and rhesus iso-immunization of severe degree." An appendix contains definitions.

252. Metcoff, Jack; Wikman-Coffelt, Joan; Yoshida, Takashi; Bernal, Alfonso; Rosado, Adolfo; Yoshida, Pablo; Urrusti, Juan; Frenk, Silvestre; Madrazo, Ricardo; Velasco, Luis; and Morales, Myriam: "Energy Metabolism and Protein Synthesis in Human Leukocytes During Pregnancy and in Placenta Related to Fetal Growth," *Pediatrics*, 51:866-877, May, 1973.

The incidence and consequences of fetal malnutrition are discussed, and the literature pertinent to the study presented is reviewed. Patterns of energy metabolism and protein synthesis were studied in the maternal leukocytes of approximately 100 pregnant women. Placental metabolism was also studied. Methods are described in detail as are the results with regard to the content of adenine nucleotides found in the leukocytes of the pregnant women, the pyruvic kinase and adenylate kinase activities in the leukocytes, the RNA polymerase activity in the maternal leukocytes, the RNA polymerase activity in the placentas of these women, and the protein synthesis by the placental polysomes. These findings indicated that energy metabolism and protein synthesis increased in maternal leukocytes in mothers who delivered full term, normal babies. Thus these patterns of maternal cell metabolism are seen as "'markers' for intrauterine growth of the fetus." "This suggests, in turn, that the factors influencing metabolism of the maternal leukocyte during pregnancy may also influence the growth of the fetus." After contrasting the maternal leukocyte activity with that of the placenta, the resultant data indicated that the metabolism of the maternal leukocyte during pregnancy correlated better with fetal growth patterns than did the metabolism of the placenta at term. "It is likely that analyses of the

metabolic pattern of the maternal leukocyte during pregnancy may predict fetal malnutrition. Diagnosis early in the third trimester of pregnancy then might permit appropriate therapy, yet to be developed, which would embrace cell replication, increase cell numbers, and improve cell metabolism in the fetus, and perhaps prevent the later consequences of fetal malnutrition."

253. Michaelis, Richard; Parmelee, Arthur H.; Stern, Evelyn; and Haber, Audrey: "Activity States in Premature and Term Infants," *Developmental Psychobiology*, 6:209-215, May, 1973.

In order to determine differences, 7 prematurely born infants were neurologically examined at 31-33, 34-36, and 38-42 weeks conceptional age, and 14 full term infants were neurologically examined at 38-42 weeks conceptional age. A standard neurological examination was used, and procedures are described. Data indicated that "the younger prematures were more often judged to be asleep and had lower scores throughout the examination when compared to the 38-42 week infants." "Crying occurred significantly more often with increasing age. In addition, the full term infants had significantly more crying scores than the prematures of the same conceptional age." These findings are interpreted.

254. Miller, Carol J.: "The Speech Therapist and the Group Treatment of Young Cerebral Palsied Children," *British Journal of Disorders of Communication*, 7:176-183, October, 1972.

The group work with young cerebral palsied children, ages 3 to 7 years, conducted by the speech therapists at the Centre for Spastic Children, London is described. The selection of children for a group, the organization of a group, the leaders, the program, the actual physical placement of the children in the group, the speech and language activities conducted, and the problems and advantages of group speech therapy work are among the aspects explained. It is stressed that the primary goals of these groups are motor in nature.

255. Miller, Herbert C., and Hassanein, Khatab: "Fetal Malnutrition in White Newborn Infants: Maternal Factors," *Pediatrics*, 52:504-512, October, 1973.

This study was conducted to identify those "maternal factors that were significantly associated with the birth of white, full-term infants who were presumed to have been malnourished in utero." The malnourished infants were diagnosed as such on the basis of their physical appearance at birth and by use of the ratio of birth weight to body length. There were 33 infants in the malnourished group (I). Results were compared to those from a group of infants whose ratios were near the mean. This group (II) was comprised of 132 infants. Methods of study are described, and much data are presented. "Maternal factors significantly associated with severe fetal malnutrition included a poor maternal weight gain, absence of any prenatal visiting, preeclampsia, major chronic illness, obesity, and the unmarried state." The findings are discussed, and guidelines to be used in diagnosing fetal malnutrition are suggested.

256. Milner, R.D.G.; Chouksey, S.K.; and Assan, R.: "Metabolic and Hormonal Effects of Glucagon Infusion in Erythroblastotic Infants," *Archives of Disease in Childhood*, 48:885-891, November, 1973.

Levels of plasma glucose, insulin, growth hormone, and glucagon were studied in erythroblastotic infants during and for 60 minutes after blood transfusion. In 25 transfusions blood preserved with acid citrate and glucose (ACD) was used. In 15 additional transfusions 10 µg of glucagon was added to the ACD, as described, and in another 10 transfusions 50 µg of glucagon was added. Findings are reported on the metabolic and hormonal effects that occurred both during and after the 3 types of transfusion. On the basis of the results, "it is concluded that the addition of 10 or 50 µg glucagon to the bottle of donor blood used for exchange transfusion may have a protective effect against post-transfusion hypoglycaemia. Measurement of the blood glucose level 60 minutes after the transfusion has both diagnostic and prognostic value in detecting hypoglycaemia."

257. Mims, LeRoy C.; Estrada, Marcello; Gooden, David S.; Caldwell, Robert R.; and Kotas, Robert V.: "Phototherapy for Neonatal Hyperbilirubinemia - A Dose: Response Relationship," *Journal of Pediatrics*, 83:658-662, October, 1973.

Forty-four newborn infants who were receiving phototherapy for nonhemalytic hyperbilirubinemia were studied in order to obtain dose-time-response information for such treatment. Four study groups were formed based on the quantity of light irradiance the infants received. These groups are described. A significant positive relationship was found between the amount of light irradiance received and the decrease noted in 24 hour serum bilirubin levels. Findings indicated "that one can predict, with a high level of confidence, the mean 24 hour bilirubin decrease if the irradiance of light in the blue region of the visible spectrum is known." Thus the need to use "a radiometer to measure light irradiance in microwatts per square centimeter per 420 to 470 nm during phototherapy for neonatal hyperbilirubinemia is stressed."

258. Mingeot, R.A., and Herbaut, M.: "The Functional Status of the Newborn Infant," *American Journal of Obstetrics and Gynecology*, 115:1138-1144, April 15, 1973.

Described is "a new system of grading of the functional status of the newborn infant," which was used in a series of 5,370 consecutive infants born in Brussels, Belgium. Findings are recorded on a chart, which is included, and analyzed by computer. The system includes the examination of the neonate regarding 10 listed tests performed immediately after delivery and 10 listed and described neuropediatric tests performed during the first 24 hours after delivery. Findings were analyzed in relation to the method of delivery, the birth weight, parity, the age of the mother, and the sex of the infant. "The tests which are proposed are a means of investigation of the newborn infant's status; they are easy to conduct and provide much information about the quality of antenatal care, the impact of the various obstetric procedures, methods of delivery, and resuscitation, and the effectiveness of neonatal pediatrics. They facilitate the early detection of abnormal physiologic and neurological conditions which are of capital importance for the future of the pediatric survey."

259. Modanlow, Houchang; Smith, Elaine; Paul, Richard H.; and Hon, Edward H.: "Complications of Fetal Blood Sampling During Labor," *Clinical Pediatrics*, 12:603-606, October, 1973.

Two complications from this method of intrauterine evaluation are discussed. They are: "a) excessive bleeding from the sampling site, and b) accidental breakage of the blade and its retention in the scalp." Three cases are presented to illustrate.

260. Mondalow, Houchang; Yeh, Sze-Ya; Hon, Edward H.; and Forsythe, Alan: "Fetal and Neonatal Biochemistry and Apgar Scores," *American Journal of Obstetrics and Gynecology*, 117:942-951, December 1, 1973.

In order to investigate the relationship between the biochemical status of the fetus during labor, delivery, and the first hour of life and Apgar scores, the biochemical changes that occur during these periods were studied in 150 high-risk pregnancies. The infants were divided into groups according to their Apgar scores at 1 and 5 minutes. Data are presented in 8 graphs. Among these groups, "no differences in biochemical status of the fetus (pH, Po_2, Pco_2, and base deficit) were found during early labor." The fetus was found to become gradually more acidotic during labor and delivery with the acidosis being more marked in those fetuses who were later found to have lower Apgar scores. A "momentary accentuation of the acidosis" occurred during the first minutes of life. "Prediction of Apgar scores by measuring fetal pH during the course of labor and delivery may be possible if the serial pH measurements are done and the relation of the sampling time with the stages of labor and abnormal fetal heart rate is considered." "A perinatologist may be made aware of fetal distress by biochemical and biophysical monitoring of the fetus during labor and hence be prepared for adequate treatment of a depressed newborn infant."

261. Modlin, Joan; Hawker, Anne; and Costello, A.J.: "An Investigation Into the Effect of Sleeping Position on Some Aspects of Early Development," *Developmental Medicine and Child Neurology*, 15:287-292, June, 1973.

The Bayley Scales of Motor and Mental Development were administered to 2 groups of seven-month-old infants for the purpose of determining if the sleeping position of the infant "influences the development of hand-eye co-ordination and 'position-linked' motor skills." Group I infants (26) normally slept in the supine position while the Group II infants (20) usually slept in the prone position. Test results were related to the usual position asleep, the usual position awake, and the possible interaction between the usual position asleep and the usual position awake. No difference between the 2 groups on any specific aspect of early development was found other than that expected by chance.

262. Mofid, M.; Brinkman, C.R., III; and Assal, N.S.: "Effects of Diazepam on Uteroplacental and Fetal Hemodynamics and Metabolism," *Obstetrics and Gynecology*, 41: 364-368, March, 1973.

With methods described, varying doses of diazepam were injected into ewes near term (a total of 8) and their fetuses. Two questions were of concern in this investigation: "a) What are the effects of diazepam on uteroplacental and fetal circulation as well as on oxygen transfer when the drug is given to the mother; and b) what is

the fetal cardiovascular and metabolic response to this pharmacologic agent when injected directly into the fetus." No changes in uteroplacental hemodynamics or oxygen transfer were noted when doses of diazepam between 0.1 and 0.5 mg/kg were injected into the mother. However, "doses greater than 0.5 mg/kg produced a slight fall in maternal arterial pressure and uteroplacental blood flow." "Fetal hemodynamics and oxygen consumption were not altered by any of the doses administered to the mother." When diazepam was intravenously injected into the fetus in doses between 0.5 and 8.0 mg/kg, no alterations in fetal cardiovascular functions or oxygenation were noted. These results and their implications are discussed.

263. Molnar, Gabriella E., and Alexander, Justin: "Objective, Quantitative Muscle Testing in Children: A Pilot Study," *Archives of Physical Medicine and Rehabilitation*, 54:224-228, May, 1973.

An isokinetic device was used in an effort to develop an objective method of testing muscle strength in children. A total of 46 normal children (25 boys and 21 girls), ages 7 to 15 years, participated and were tested on the strength of elbow and knee flexors and extensors. No significant difference was found when the test-retest reliability of the procedure was investigated. The most significant correlation was found between muscle strength and height; however, significant correlations were also found between muscle strength and other parameters. Trends suggested by the data are listed. The usefulness of this device as a means of objectively testing muscle strength in children was established, and "the need for further studies to develop standards of muscle strength for children is stressed."

264. Molnar, Gabriella E., and Taft, Lawrence T.: "Cerebral Palsy," *Mental Retardation and Developmental Disabilities*, 5:85-112, 1973.

Aspects considered include the incidence of cerebral palsy, the definition of the term and diagnostic criteria, the etiology and pathology, physical manifestations, treatment, associated disabilities, and "rationale for treatment." A 12-page bibliography follows the article.

265. Mølsted-Pedersen, Lars; Trautner, Hans; and Jørgensen, Kaj R.: "Plasma Insulin and K Values During Intravenous Glucose Tolerance Test in Newborn Infants With Erythroblastosis Foetalis," *Acta Paediatrica Scandinavica*, 62:11-16, January, 1973.

Similarities found between neonates with erythroblastosis fetalis (e.f.) and neonates of diabetic mothers are described. In order to further study these factors, plasma insulin was determined during i.v. glucose tolerance tests (GTT) conducted 3 hours after birth on a group of 18 infants with e.f. Results were compared with those from a group of 11 normal control infants. Findings indicated that the "mean fasting plasma insulin concentration as well as the insulin concentration at each time during the i.v. GTT and the disappearance rate of glucose (K value) were significantly higher in the e.f. infants than in the control group." Also, significant positive correlations were discovered between birth weight and fasting insulin concentrations and between birth weight and K values. Findings are discussed. It was felt that the hyperinsulinism found in the e.f. infants must be of a different genesis than that seen in infants of diabetic mothers.

266. "Mom's Diet: Key to Child's Growth," *Medical World News*, 14:28-29+, January 5, 1973.

Reported is a summary of the evidence presented by numerous researchers at the Symposium on Nutrition and Fetal Development held at Columbia University "that the mother's nutritional status - before and during pregnancy - influences the quality of her child's later life."

267. Munroe, Jeanette: "Walkers Adapted for the Handicapped Child," *Physical Therapy*, 53:868-870, August, 1973.

The success of adapting existing equipment to the special needs of individual handicapped children at the Houston Shrine Hospital is reported. In so adapting, 3 principles regarding the child must be kept in mind: "1) He must feel secure. 2) He must be motivated. 3) He must be physically assisted in his first attempts to walk." Described are the steps taken to adapt inexpensive, ordinary infant walkers for use with handicapped children as well as the adaptation of a chrome kitchen chair into a "chair walker" for children who need less support.

268. Murata, Yuji, and Martin, Chester B., Jr.: "Growth of the Biparietal Diameter of the Fetal Head in Diabetic Pregnancy," *American Journal of Obstetrics and Gynecology*, 115:252-256, January 15, 1973.

Ultrasound was used to determine the biparietal diameter of the fetal head in a group of patients whose pregnancies were complicated by diabetes mellitus. Results were compared to those of a group of normal pregnant patients. The diabetic group was subdivided by class of maternal diabetes, but no significant differences in fetal biparietal diameters among these classes were demonstrated. Results showed there to be no significant differences between the biparietal diameters of the diabetic and the normal patients for weeks 30 through 37 of pregnancy. However, in weeks 38, 39, and 40 of pregnancy the biparietal diameters of the diabetic group were found to be significantly larger than those measured in the normal group. Speculation is offered as to reasons for this difference.

269. Murayama, Keizaburo; Ko, Zuihyo; Kawakami, Hiroshi; Kusakabe, Masahiro; and Saito, Koji: "Fiberoptic Oximeter for Fetuses and Neonates," *American Journal of Obstetrics and Gynecology*, 115:1125-1131, April 15, 1973.

The characteristics of this new fiberoptic oximeter are described. The oxygen saturation of neonatal blood and umbilical venous and arterial blood was measured in 30 cases using both this new method and the Astrup apparatus. "The results showed a very favorable correlation with a coefficient of $r = 0.99$ and a regression line of $y = 1.01x - 0.64$, confirming that the new apparatus is well suited for clinical use."

270. Murray, Robert F., Jr., and Rosser, Pearl Lockhart, eds: *The Genetic, Metabolic and Developmental Aspects of Mental Retardation*. Springfield, Ill.: C.C. Thomas, 1972. 343 pp.

This book is an outgrowth of an interdisciplinary seminar held at Harvard University College of Medicine in 1969. The contributions made at the seminar comprise the 25 chapters of the book and are presented in two subject areas: "Genetic and Metabolic

Aspects of Mental Retardation" (Part I), and "Developmental Aspects of Mental Retardation" (Part II). Education and learning are emphasized among the developmental aspects. References are listed after the papers, and a glossary of terms is included.

271. Myers, Ronald E.; Mueller-Heubach, Eberhard; and Adamsons, Karlis: "Predictability of the State of Fetal Oxygenation From a Quantitative Analysis of the Components of Late Deceleration," *American Journal of Obstetrics and Gynecology*, 115:1083-1094, April 15, 1973.

With methods described in detail, 15 near-term rhesus monkeys were studied under anesthesia regarding "the relationship between the various components of late decelerations of fetal heart rate (type II dips) and pH, Po_2 and hemoglobin saturation with oxygen of the fetal arterial blood." When the fetal monkeys were asphyxiated as described, there was the spontaneous occurrence of strong uterine contractions. The magnitudes of 3 individual components of the resulting late decelerations in fetal heart rate "were measured and determined from the polygraphic recordings." "The components were: (1) the period between the onset of the uterine contractions and the beginnings of the associated late decelerations [latency period], (2) the maximum rate of decrease in the fetal heart rate, and (3) the over-all magnitude of the fall in the fetal heart rate during the late decelerations." All 3 of these components were found to be "good predictors of the fetal oxygenation (the Po_2 and per cent saturation) of hemoglobin with oxygen of the fetal blood." "The correlations between these variables were further improved when the durations of the uterine contractions were also taken into consideration. Although the values of these three components of late deceleration accurately reflected the state of fetal oxygenation, they bore no relation to the fetal blood pH."

272. Naeye, Richard L., and Blanc, William A.: "Unfavorable Outcome of Pregnancy: Repeated Losses," *American Journal of Obstetrics and Gynecology*, 116:1133-1137, August 15, 1973.

Autopsies were conducted on 783 consecutive neonatal and fetal deaths, and resultant data as well as other fetal and maternal data on the cases were analyzed as described. Elements of the amniotic fluid infection syndrome were identified in 30.5 per cent of offspring of first pregnancies, 22.9 per cent of neonates when all previous pregnancies were successful, and in 54.5 per cent of pregnancies when 2 or more previous pregnancies were unsuccessful. In an analysis of other common fetal, neonatal, and maternal disorders, only Rh erythroblastosis fetalis had a significant association with previous premature deliveries and perinatal losses." These and other findings are discussed.

273. Naeye, Richard L.; Blanc, William; Leblanc, Werner; and Khatamee, Masood A.: "Fetal Complications of Maternal Heroin Addiction: Abnormal Growth, Infections, and Episodes of Stress," *Journal of Pediatrics*, 83:1055-1061, December, 1973.

Studied were 82 mothers who used heroin during their pregnancies and their offspring. A large control group was also studied, and all methods are described. Several charts were presented to describe the differences found between the heroin addicted patients and the control patients regarding "weights of newborn infants, placental weights, incidence of placentitis, and maternal fever," "body and organ weights in per cent of published values for neonates exposed to heroin, methadone, or hepatitis virus during gestation," "number of cells or structures in organs of neonates born in the third trimester," "cellular and organ measurements for neonates born in the third trimester," and "incidence of various disorders in infants who were stillborn or died within the first 72 hours after birth." Findings indicated that "nearly 60 per cent of the mothers or their newborn infants had evidence of acute infection." "Most of the infected mothers delivered prematurely, whereas those not infected delivered at term. Meconium histiocytosis was very common in the placentas of heroin-exposed infants, suggesting that they had experienced episodes of distress during fetal life. As a group, infants born to heroin addicts were small for gestational age; all organs were affected. Retardation of fetal growth could not always be explained by undernutrition of the addicted mother."

274. Naeye, Richard L.; Blanc, William; and Paul, Cheryl: "Effects of Maternal Nutrition on the Human Fetus," *Pediatrics*, 52:494-503, October, 1973.

The records of 467 stillborn and newborn deceased infants were studied with regard to the correlation between the body, organ and cellular growth of the fetus and the pre-, mid, and late pregnancy nutritional status of the mother. The influences on fetal growth of several other demographic and maternal factors were also studied. All of these cases had no chronic maternal or fetal disorders. The study patients and methods are explained, and much data are presented. Among the findings was that "a progressive decrease in newborn body and organ measurements took place in passing from nutritional category 1 (overweight mothers with high pregnancy weight gain) to category 4 (underweight with low weight gain)." Although undernutrition of the mother before the third trimester of pregnancy was found to have very little influence on fetal growth, such undernutrition in late pregnancy had a very pronounced effect on fetal body, organ, and cell growth. Seven "factors that did not effect fetal body and organ growth when compared with cases in the same nutritional category" are listed. The results and their implications are discussed.

275. Narabayashi, H., and Nakamura, R.: "Clinical Picture of Cerebral Palsy in Neurological Understanding," *Confinia Neurologica*, 34:7-13, 1972.

Two points relevant to this subject are discussed. They are "the pattern of abnormal movement" seen in cerebral palsy and "the sidedness of muscular innervation" in cerebral palsy.

276. Nelson, Stephen E., and Sayers, Martin P.: "The Fate of Children Sustaining Severe Head Trauma During Birth," *Pediatrics*, 51:169-174, February, 1973.

The historical literature on the subject is described. Then reviewed are "42 children treated in the Columbus Children's Hospital from 1958 to 1962 for severe acute cerebral trauma sustained during delivery" (27 boys and 15 girls). Of the 42 children, 6 died within a week after admission to the hospital, and 36 were discharged alive. Of these 36, 15 had depressed skull fractures, 2 had linear fractures, 1 had a basal fracture, 10 had acute subdural hematoma, 1 had an intracerebral hematoma, and 13 had chronic subdural hematoma. These groups of cases are described, and 7 implications of these findings are presented. "Of the 15 infants who had closed, depressed skull fractures, 13 now are normal, whereas the mortality of acute subdural hematoma was 50% and only one of the five survivors has a normal IQ. Three of 13 children with chronic subdural hematomas now have a normal IQ."

277. "National Conference on Research in Maternal and Child Health," Berkeley, California, 1973. 56 pp.

This book contains the report of this Conference which was held in May, 1973 at the University of California at Berkeley. The Conference was sponsored by the Maternal and Child Health Program of the University's School of Public Health and by the Maternal and Child Health Service of the U.S. Department of Health, Education, and Welfare. In the first chapter specific "Recommended Priorities in MCH Research" are listed. This is followed by descriptions of the "Research Program of Federal MCHS" by Dr. Vince Hutchins, the "Research in Perinatology" by Dr. Sam Shapiro, the "Identification of High Priority Topics for Research in MCH" by Dr. Charles Gershenson, and the "Methodology of Research in MCH" by Dr. William Daniel, Jr. The methods used and the results of "A Study of Research Activities, Priorities, and Deeds in MCH-1973" are presented with much data given in tables. Also included is the questionnaire used in the study which was sent to "466 health agencies throughout the country." The program of this Conference is outlined, and participants are listed.

278. Nelson, George H.: "Determination of Amniotic Fluid Total Phospholipid Phosphorus as a Test for Fetal Lung Maturity," *American Journal of Obstetrics and Gynecology*, 115:933-941, April 1, 1973.

Previous research in the area of assessing fetal lung maturity is reviewed. In order to determine the usefulness of amniotic fluid total phospholipid phosphorus (TPP) as a test for fetal lung maturity and to compare this method with that of determining amniotic fluid lecithin phosphorus (Lec.P), both of these determinations were made in a group of pregnant women at various stages of gestation and at delivery. All methods are described. "A high correlation coefficient is found between the two measurements. In 12 samples associated with infants who developed the respiratory distress syndrome (RDS), the levels of both Lec.P and TPP were seen to be clustered

at the low end of the spread of values. It would appear that a determination of TPP can be used for evaluation of fetal pulmonary maturity where it is impractical for one reason or another to perform the more precise determination of Lec.P." Findings are discussed and a TPP value of 0.140 mg per 100 ml or greater is recommended as being indicative of fetal pulmonary maturity.

279. "Newborns Get Automated Hearing Test," *Medical World News*, 14:14-15, October 5, 1973.

Reported is the development of an inexpensive automated hearing test that can be used to screen newborns. It has been developed by Dr. F. Blair Simmons and associates at Stanford Medical Center where 5,000 babies have been tested. Tracings from the test and the equipment for the "crib-o-gram" are pictured. "The 'Crib-o-gram' automatically records infant movements when a loudspeaker broadcasts a one-second 90-decible noise that sounds like a steam engine's 'huff.' When this is done at least ten times (the average at Stanford is 30 times), the noise responses or the lack of them can be distinguished from random movements and the infant given a passing or failing score." Scoring methods and study findings are described.

280. Newcommer, Phyllis, and Hammill, Donald: "A Visual Perception Test for Motorically Impaired Children," *Rehabilitation Literature*, 34:45-46, February, 1973.

A test of this nature "that measures visual perception independently of motor coordination" and "holds particular promise for use with orthopedically handicapped children" is the subject of this article. The test is named the Motor-Free Test of Visual Perception (MVPT) and was standardized on 833 normal children, ages 4 through 8 years. The procedures and results of administering the test to 90 orthopedically handicapped children, ages 5 to 12 years are described. Findings indicate that the MVPT is suitable for testing the visual perception of orthopedically handicapped children.

281. Newcomer, Phyllis, and Hammill, Donald: "Visual Perception of Motor Impaired Children: Implications for Assessment," *Exceptional Children*, 39:335-337, January, 1973.

Explained is "the need to measure the visual perception of motor handicapped children with a motor-free and motor-involved test in order to answer the following questions: 1. Do motorically handicapped children as a group have serious deficiencies in visual perception? 2. Are visual perception and motor development relatively independent systems?" Thus, the Motor Free Test of Visual Perception and the Bender Visual Motor Gestalt Test for Children were administered to 90 motor impaired children, ages 5 to 12 years, who were classified as being severely, moderately, or mildly handicapped. "The children tended to perform at the CA [chronological age] level on the motor-free test across all three handicapped classifications. Performance on the Bender test, however, was strongly associated with the degree of motor handicap, and PA [perceptual age] was consistently below CA. For the severe category, the discrepancy between PA and CA was at least 33 months." Findings are discussed.

282. Nørgaard-Pedersen, B.: "a_1-Fetoprotein Concentration in Cord Serum as a Parameter for Gestational Age," *Acta Paediatrica Scandinavica*, 62:167-172, March, 1973.

Cord serum was obtained just after delivery from 258 infants whose gestational age was known and was between 210 and 306 days. The concentration of a_1-fetoprotein in these samples was measured using a described immunoelectrophoretical method. Correlations were then determined between gestational age and the a_1-fetoprotein values, birth

weight, crown-heel length at birth, and head circumference at birth. A significant negative correlation (r=0.89) was found between serum a_1-fetoprotein and gestational age. When only the 149 infants with a gestational age of 280 days or less were studied, the correlation was -0.92. The measurement of a_1-fetoprotein was found to be a much better indicator of gestational age than were birth weight, crown-heel length, or head circumference. "In conclusion, laboratory assessment of gestational age by means of a_1-foetroprotein concentration in umbilical cord blood represents a valuable tool in testing the degree of development of the newborn infant. The method is easy and reliable and is without any risk for the mother and the newborn. Whether it is unaltered in pathological pregnancies remains to be shown."

283. Norman, Margaret G.; Gans, Marvin H.; and Lowden, J. Alexander: "Failure to Thrive and Spasticity in a 5-Month-Old Girl," *Journal of Pediatrics*, 83:1078-1082, December, 1973.

Such a patient is described, and a discussion is conducted by Dr. Gans. Drs. Norman and Lowden review the pathological findings in the case. The diagnosis of Krabbe's disease was made.

284. Nusbaum, Michael J., and Zettner, Alfred: "The Content of Calcium, Magnesium, Copper, Iron, Sodium, and Potassium in Amniotic Fluid From Eleven to Nineteen Weeks' Gestation," *American Journal of Obstetrics and Gynecology*, 115:219-226, January 15, 1973.

Such concentrations were studied and compared in the amniotic fluid and the maternal serum of a group of women at between 11 and 19 weeks of gestation who underwent therapeutic abortions. Methods of analysis are described. "Calcium, magnesium, copper, and iron were found to be significantly lower in amniotic fluid than in maternal serum. Sodium and potassium in amniotic fluid did not differ significantly from maternal serum." These findings are then discussed in detail with emphasis placed on the possibility "that metal analysis of amniotic fluid may be helpful in differentiating disease states from normalcy."

285. Oh, W.; Yau, A.C.; Hanson, J.S.; and Lind, J.: "Peripheral Circulatory Response to Phototherapy in Newborn Infants," *Acta Paediatrica Scandinavica*, 62:49-54, January, 1973.

Eight neonates who were receiving phototherapy for jaundice were studied with regard to "calf blood flow (CBF), calf skin temperature, incubator wall and ambient temperature, and respiratory rate." All methods are described. Findings indicated that during the 30 minute phototherapy period, "the CBF increased to a range of 30 to 80% above the control values." There was a direct correlation found between the CBF and the leg skin temperature at 15 and 30 minutes after phototherapy. There was a significant decrease in the incubator air temperature during phototherapy. This was felt to be due to the servo control unit that shuts off incubator heat when the epigastric skin temperature rises. "The increase in CBF is probably evidence of peripheral vasodilatation to facilitate evaporative heat loss. An increase in respiratory rate was also observed during phototherapy. The observed increase in heat loss (and water loss) from vasodilatation and increased respiratory rate serve as a basis for the increase in insensible water loss as previously reported" (in a previous study).

286. Organ, L.W.; Bernstein, A.; Rowe, I.H.; and Smith, K.C.: "The Pre-ejection Period of the Fetal Heart: Detection During Labor With Doppler Ultrasound," *American Journal of Obstetrics and Gynecology*, 115:369-376, February 1, 1973.

Previous use of Doppler ultrasound with the fetus and the pre-ejection period (PEP) of the cardiac cycle are discussed. "The PEP, which is related to myocardial contractility, is defined as the period from the beginning of the QRS complex to the opening of the aortic valve." Doppler ultrasound and the fetal electrocardiogram were used in combination on 26 patients in active labor in an attempt to determine the PEP of the cardiac cycle during labor. All methods are described, and results are presented for Subjects 1-14 on whom computer averaging of the data was conducted and on Subjects 15-26 on whom the data was analyzed without such averaging. Findings indicated that the PEP could be reliably evaluated in the majority of the fetuses during labor by the method used in this investigation. "The intrapartum availability of the PEP to a degree greater than has been considered possible should allow its consideration as a parameter for following changing fetal status during labor."

287. Organ, L.W.; Milligan, J.E.; Goodwin, J.W.; and Bain, M.J.C.: "The Pre-ejection Period of the Fetal Heart: Response to Stress in the Term Fetal Lamb," *American Journal of Obstetrics and Gynecology*, 115:377-386, February 1, 1973.

The pre-ejection period (PEP) of the fetal cardiac cycle is defined, and its relationship to myocardial contractility is discussed. The PEP was studied in 13 fetal lambs who were exteriorized by cesarean section within 12 days of term with the umbilical circulation intact. All methods of study are explained for the various experiments conducted. The PEP was found "to be a reliable index of myocardial contractility." When fetal hypoxemia was induced as described, the PEP was consistently shortened, "with the magnitude of the decrease proportional to the severity of hypoxemia." Changes in the fetal heart rate during the same period are described and were variable. When umbilical cord occulusions were performed as described, the PEP was usually lengthened during occulusion and was shortened on release. These effects were felt to be "most likely related to great changes in aortic diastolic pressure." These results and their implications are discussed.

288. Ornoy, A.; Segal, S.; Nishmi, M.; Simcha, A.; and Polishuk, W.Z.: "Fetal and Placental Pathology in Gestational Rubella," *American Journal of Obstetrics and Gynecology*, 116:949-956, August 1, 1973.

Following a rubella epidemic in Israel in 1972, 45 fetuses and placentas, obtained from therapeutic abortions carried out on women who were suspected of contracting the disease, were studied. Findings are reported individually for those 17 cases whose pregnancies were interrupted during the third month of gestation and for those 28 cases whose pregnancies were interrupted during the fifth and sixth gestational months. In 32 cases there was clinical evidence of rubella, and in 13 cases close contact with rubella had occurred. A control group was also studied. "Of 14 cases with clinical rubella in which pregnancy was interrupted during the third month (and only the placentas were examined), typical placental damage was found in 8. Of 18 cases of clinical rubella in which pregnancy was interrupted at 5 to 6 months, 9 of the fetuses exhibited various malformations, and 10 placentas were damaged. Of the 13 cases of close contact with rubella, 10 fetuses were examined, and 2 were malformed; all the placentas were studied, and 2 were found to have abnormalities typical of those caused by rubella." Results are discussed.

289. Orzalesi, Marcello; Gloria, Fulvia; Lucarelli, Paola; and Bottini, Egidio: "ABO System Incompatibility: Relationship Between Direct Coombs Test Positivity and Neonatal Jaundice," *Pediatrics*, 51:288-289, February, 1973.

Briefly described is a study in which a direct Coombs test was performed on a consecutive series of ABO- and/or Rh- incompatible newborns. These results were then correlated with the appearance of jaundice during the first 3 or 4 days of life and the serum bilirubin levels of these infants. "The presence of jaundice was significantly associated with Coombs test positivity in infants of all groups. In infants with ABO incompatibility the presence of a positive Coombs test carried a risk of neonatal jaundice which was approximately four times higher than in infants with a negative Coombs test; the risk of a bilirubin level over 10 mg/100 ml was approximately three times higher. Infants with ABO incompatibility and a positive Coombs test developed neonatal jaundice in approximately 50% of the cases and a serum bilirubin level higher than 10 mg/100 ml in 25%." It is concluded that performance of a direct Coombs test identifies "a group of infants with a higher risk of neonatal jaundice and must, therefore, be included in the organization of any program aimed at the prevention of severe hyperbilirubinemia."

290. Oski, Frank A.: "The Unique Fetal Red Cell and Its Function," *Pediatrics*, 51:494-500, March, 1973.

Dr. Oski discusses the differences between the fetal red cell and the adult red cell and emphasizes those differences which handicap the fetal cell in the extrauterine environment. "The rapid replacement of these cells by artificial means, such as early exchange transfusion, may offer an advantage to the newborn infant in certain clinical situations." Much research is reviewed.

291. Osofsky, Howard J., ed.: "High Risk Pregnancy With Emphasis Upon Maternal and Fetal Well-Being," *Clinical Obstetrics and Gynecology*, 16:1:1-397, March, 1973.

This issue contains some 20 articles on the various aspects of this subject. Those articles of particular relevancy are cited under their individual authors and annotated separately in this bibliography.

292. Osofsky, Howard J., and Kendall, Norman: "Poverty as a Criterion of Risk," *Clinical Obstetrics and Gynecology*, 16:103-119, March, 1973.

Discussed are the relationship between poverty and pregnancy outcome, the relationship between factors associated with poverty during pregnancy and subsequent child development, and the experience of the authors at the Temple University Health Science Center which is located in a low-income area of Philadelphia.

293. O'Sullivan, John B.; Charles, David; Mahan, Clare M.; and Dandrow, Robert V.: "Gestational Diabetes and Perinatal Mortality Rate," *American Journal of Obstetrics and Gynecology*, 116:901-904, August 1, 1973.

Prospectively studied regarding perinatal mortality were 187 prenatal gestational diabetic patients and 259 randomly selected prenatal control patients who had had a normal glucose tolerance test. The perinatal mortality rate was found to be significantly higher in the gestational diabetic group (6.4%) than in the control group (1.5%). Upon further analysis, "age was found to have a disproportionately adverse effect, enhanced slightly by obesity, on the pregnancies of gestational diabetic patients when compared with those of negative control patients." On the basis of the findings, it was felt that the gestational diabetic patients of age 25 years and older could be identified as being a subgroup of such patients having an increased risk of perinatal mortality. This risk was further increased if the patient was overweight. Results are discussed.

294. O'Sullivan, John B.; Mahan, Clare M.; Charles, David; and Dandrow, Robert V.: "Screening Criteria for High-Risk Gestational Diabetic Patients," *American Journal of Obstetrics and Gynecology*, 116:895-900, August 1, 1973.

Various recommended clinical screening criteria for gestational diabetes were evaluated for their value in identifying this condition. Two series of prenatal patients were studied and are described. Use of the clinical history of the patient was found to be ineffective in identifying the gestational diabetic patient. "A screening blood sugar test and the age of the prenatal patient appear as the two most important of the factors studied for the identification of the gestational diabetic patient. A one-hour screening blood sugar test following oral ingestion of 50 Gm of glucose and a glucose tolerance test on those patients with levels exceeding 130 mg per 100 ml of whole blood are recommended. For the gestational diabetic patient at special risk for a current pregnancy, this procedure should be carried out in all patients 25 years or older."

295. Ounsted, Margaret, and Ounsted, Christopher: *On Fetal Growth Rate (Its Variations and Their Consequences)*. London: William Heinemann Medical Books and Philadelphia: J.B. Lippincott, 1973. 204 pp. (Clinics in Developmental Medicine No. 46.)

In this book are examined the factors that have been found in the personal studies of the authors and others to be associated with variations in fetal growth. Also examined are the various sequelae of these deviations. In Chapters 1 and 2 background information is presented on "general factors" related to fetal growth and on "the placenta." "Maternal-fetal interactions" are considered in Chapter 3 with studies on other mammals and on humans reported. Maternal factors associated with "the extremes of fetal growth rate" are the subject of Chapter 4, and the "familial factors" thus associated are described in Chapter 5. In Chapter 6, entitled "Hypotheses," the data are reviewed, and an attempt is made "to arrive at points of view

from which further enquiries may fruitfully be made." The various sequelae related to deviation in fetal growth rate are discussed in Chapters 7 ("The Risks of the Fetus"), 8 ("The Neonate"), and 9 ("Post-Natal Growth"). Methods of assessing fetal wellbeing and fetal maturity are reviewed in Chapter 7. The small-for-dates and the large-for-dates infants are among the topics of concern in Chapter 9, and a total of 27 case reports are presented to illustrate the extremes of fetal growth and the absence or presence of sequelae. Chapter 10 contains some "practical implications" and "some questions to be answered." An 18-page bibliography follows the text.

296. Pagliara, Anthony S.; Karl, Irene E.; Haymond, Morey; and Kipnis, David M.: "Hypoglycemia in Infancy and Childhood. Part I," *Journal of Pediatrics*, 82:365-379, March, 1973.

Discussed in the first part of this two-part article are "the biochemical, physiologic, and endocrine factors maintaining glucose homeostatis in man." This is followed by an explanation of the definition, the signs, and the symptoms of hypoglycemia. The hypoglycemic syndromes are then reviewed. They are classified into 2 main groupings: neonatal hypoglycemia and hypoglycemia of infancy and childhood. The former group, including "hypoglycemia associated with the small-for-gestational age infant" and "transient hyperinsulinemia of the newborn infant," is considered in this section while the latter group and its subdivisions are discussed in Part II.

297. Pagliara, Anthony S.; Karl, Irene E.; Haymond, Morey; and Kipnis, David M.: "Hypoglycemia in Infancy and Childhood. Part II," *Journal of Pediatrics*, 82:558-577, April, 1973.

Considered under the classification of hypoglycemia in infancy and childhood are hyperinsulinism, substrate-limited hypoglycemia, and hepatic enzyme deficiencies. Several case reports are included. The article is concluded by a discussion of diagnostic procedures in hypoglycemia.

298. Palmgren, Bertil; Wahlén, Tore; and Wallander, Bo: "Toxaemia and Cigarette Smoking During Pregnancy," *Acta Obstetricia et Gynecologica Scandinavica*, 52:2:183-185, 1973.

This study was undertaken on a large group of pregnant women to further study the "possible 'protective' effect of cigarette smoking on toxaemia of pregnancy." The incidence of prematurity was found to be "clearly higher" in the women who smoked than in the nonsmokers, but the perinatal mortality of these premature infants was found to be much higher (29.5%) among the non-smokers than among the smokers (16.5% among those who smoked less than 10 cigarettes/day and 18.2% among those who smoked more than 10 cigarettes/day). There was also an increased incidence of bleeding and infarction of the placenta and a significantly higher frequency of toxemia among the non-smokers. Possible explanations for these findings are discussed.

299. Pantelakis, Stefanos N.; Papadimitriou, George C.; and Doxiadis, Spyros A.: "Influence of Induced and Spontaneous Abortions on the Outcome of Subsequent Pregnancies," *American Journal of Obstetrics and Gynecology*, 116:799-805, July 15, 1973.

This influence was studied in an investigation involving 13,242 women who were admitted to an Athens, Greece hospital for delivery over a 2 year period. The women were divided into 3 groups by social class. Some 29% of the 8,312 multigravid women admitted to having had 1 or more induced abortions. "The percentage of stillbirths and premature births among the women with previous abortions, induced or spontaneous, was double that of the control group."

300. Papaevangelou, G.; Papadatos, C.; and Alexiou, D.: "The Effect of Maternal Age, Parity and Social Class on the Incidence of Small-for-Dates Newborns," *Acta Paediatrica Scandinavica*, 62:527-530, September, 1973.

The effect of these maternal characteristics on the incidence of small-for-dates (S.F.D.) infants was studied in Athens, Greece using a sample of 4,369 consecutive newborns of whom 112 were classified as being S.F.D. When social class was divided into 5 groups with I being the highest, there was a significantly higher incidence of S.F.D. infants in groups IV and V than there was in the 3 higher groups. There was also a higher incidence of S.F.D. infants among the very young mothers and in those mothers over 30 years of age. Primiparous women gave birth more frequently to S.F.D. babies than did multiparous women.

301. Paparella, P.; Galeotti, T.; Bompiani, A.; and Terranova, T.: "Experimental Observations on the Energy Metabolism of Human Placenta." *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:627-632, July, 1973.

Oxygen consumption was studied as described in placentae from normal pregnancies, histologically abnormal placentae, placentae from pregnancies complicated by intrauterine fetal malnutrition, placentae from post-term pregnancies, and placentae from pregnancies with Rh-isoimmunization. Respiration was also measured "in the presence of inhibitors of mitochondrial electron transport and oxidative phosphorylation." "Oxygen consumption of histologically abnormal placentae was reduced but the effect on the fetus probably depends on the timing of the abnormality. A reduced placental respiratory rate, whether accompanied by no obvious histological change, or with the 'senescent' changes of postmaturity, or by damage due to rhesus isoimmunization was associated with an adverse effect on fetal growth or well-being." These and other results and their implications regarding fetal well being are discussed.

302. Parekh, Mahendar C.; Benjamin, Fred; and Gastillo, Norma: "The Influence of Maternal Human Growth Hormone Secretion on the Weight of the Newborn Infant," *American Journal of Obstetrics and Gynecology*, 115:197-201, January 15, 1973.

Maternal human growth hormone (HGH) secretion was studied as described in the mothers of infants of various birth weights. On the basis of the results it was felt "that maternal HGH does not play a role in the birth weight of the newborn infant."

303. Parkinson, Christine E., and Harvey, David R.: "A Comparison Between the Lecithin/Sphingomyelin Ratio and Other Methods of Assessing the Presence of Fetal Pulmonary Surfactant in Amniotic Fluid," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:406-411, May, 1973.

The lecithin/sphingomyelin (L/S) ratio, the determination of lecithin concentration in amniotic fluid, and the rapid 'shake test' for surfactant were compared with regard to assessing fetal lung maturity. These tests are described. Results of using the L/S ratio and the 'shake test' were similar as were the results of using the L/S ratio and the estimation of lecithin concentration. Also compared were several techniques used in determining the L/S ratio. Results are described, and the advantages and disadvantages of each method studied are pointed out. "The main conclusion that can be drawn from this study is that the 'shake test' on its own is the simplest

and a fairly reliable test for the diagnosis of the presence of adequate fetal pulmonary surfactant, since it compares very well with the L/S ratio."

304. Parmelee, Arthur H., and Haber, Audrey: "Who is the 'Risk Infant'?" *Clinical Obstetrics and Gynecology*, 16:376-387, March, 1973.

In this article the risk infant is defined as being "any newborn or young infant who has a high probablility of manifesting in childhood a sensory or motor deficit and/or mental handicap." Attempts that have been made to identify such infants and to cite the degrees of risk in relation to the various detrimental pregnancy and perinatal events are reviewed. "Investigators have tackled the problem of the risk infant by attempting to assess the risk potential of isolated events. For example, studies have tried to relate anoxia, prematurity or certain specific pregnancy or perinatal events to later development. We have attempted to show why this strategy is inadequate for the problem. We have indicated that a more satisfactory approach involves the use of multiple criteria in a cumulative manner."

305. Paul, Richard H., and Hon, Edward H.: "Clinical Fetal Monitoring. IV. Experience With a Spiral Electrode," *Obstetrics and Gynecology*, 41:777-780, May, 1973.

Use of a spiral electrode was evaluated in detail in 110 patients and its usage to monitor 2,000 additional patients is also reported. The application and removal techniques are described, and results with clinical usage of the spiral electrode are presented. "Overall function and reliability are superior to the silver-silver chloride clip type electrode." Specific advantages are discussed.

306. Peltzman, Philip; Goldstein, Phillip J.; and Battagin, Robert: "Optical Analysis of the Fetal Electroencephalogram," *American Journal of Obstetrics and Gynecology*, 116: 957-962, August 1, 1973.

Described are methods used to process electroencephalographic data from the fetus during labor. "Methods described include data reduction operations with an optical system and video output display."

307. Peltzman, Philip; Goldstein, Phillip J.; and Battagin, Robert: "Quantitative Analysis of Fetal Electrophysiologic Data," *American Journal of Obstetrics and Gynecology*, 115:1117-1124, April 15, 1973.

A digital computer was used in this described study of 5 pregnant women to quantitatively analyze data obtained during labor pertaining to the continuous fetal electroencephalogram, the fetal heart rate, and intrauterine pressure. The 5 women and their infants are described as are monitor and computer methods. "The results obtained with the described methods indicate their potential application to the investigation of the fetal effects of extrauterine influence."

308. Persianinov, L.S.: "The Effect of Normal and Abnormal Labour on the Foetus," *Acta Obstetricia et Gynecologica Scandinavica*, 52:1:29-36, 1973.

The effect is discussed in this review article with emphasis placed on the abnormal conditions during labor that may adversely affect the fetus. Numerous illustrations of fetal ECG changes associated with various abnormal conditions are included.

309. Persson, B.; Gentz, J.; and Kellum, M.: "Metobolic Observations in Infants of Strictly Controlled Diabetic Mothers," *Acta Paediatrica Scandinavica*, 62:465-473, September, 1973.

Studied in 37 infants of insulin-dependent mothers (IDM), 15 infants of gestational diabetic mothers (IGDM) and a group of control infants were the plasma levels of glucose, free fatty acids (FFA), glycerol, and D-β-hydroxybutyrate during the first 2 hours after birth. The management of the patients and the methods of analysis are explained. Results are presented regarding the studied values at birth among the 3 groups and the changes in these values during the first 2 hours of life. The influence of pre-natal history on the values was also studied. Findings are discussed and compared to those of other studies.

310. Persson, B.; Lunell, N.-O.; Aubert, M.L.; Carlström, K.; and Felber, J.P.: "Determination of Plasma Human Chorionic Somatomammotropin and Urinary Oestriol in Diabetic Pregnancies," *Acta Obstetricia et Gynecologica Scandinavica*, 52:1:63-67, 1973.

In order to investigate the value of HCS determination as an index of fetal well-being, HCS values and urinary estriol excretion values were determined from the 32nd week of pregnancy in 15 normal patients, 32 women having "insulin-requiring diabetes," and 13 women having gestational diabetes. Six diabetic patients were found to have 1 or more HCS determinations below 4 μg/ml, and 4 of these women delivered small-for-dates infants, 2 of whom died. With the exception of 1 case, all of the diabetic women who had HCS values above 4 μg/ml delivered normal infants. "It is concluded that determination of HCS in addition to determination of oestriol in pregnancies at risk could be of practical clinical value."

311. Peters, Joseph J.; Hilgeford, Eric J.; and Vonderahe, Alphonse R.: "Ontogenesis of Electroencephalographic Seizure Patterns in Developing Chick Embryos During Recovery From Hypothermia Hypoxia," *Developmental Psychogiology*, 6:337-348, July, 1973.

Studied were 150 chick embryos at between 15 to 20 days of incubation. Hypothermia of 20°C was induced as described. This was followed by a period of hypoxia of either 15 or 30 minutes "until the EEG record showed no differences of potential." The eggs were then exposed to air, and the temperature was raised to 30°C, maintained there for 1 hour, and then was raised to 36°C. During this period and before the body temperature reached 36°C, 2 types of seizure episodes were observed. These were designated as Type I and Type II and are described. "About the 17th day of incubation, the physiological components responsible for producing EEG patterns during episodes seem to undergo an abrupt maturational change indicated by the increase in percentage of embryos undergoing Type I episodes, and by changes in frequency of waves and duration of episodes." These changes and other aspects of the study are discussed.

312. Petrucco, O.M.; Cellier, K.; and Fishtall, A.: "Diagnosis of Intrauterine Fetal Growth Retardation by Serial Serum Oxytocinase, Urinary Oestrogen and Serum Heat Stable Alkaline Phosphatase (HSAP) Estimations in Uncomplicated and Hypertensive Pregnancies," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:499-507, June, 1973.

A study was conducted in which serum oxytocinase, urinary estrogen and serum HSAP were serially estimated in pregnant normotensive and hypertensive patients. The method of

grouping the patients, the assay methods, and the statistical methods are explained. Results are presented regarding those patients who delivered normal infants and those who delivered growth retarded infants. "Patients delivered of growth retarded infants whether hypertensive or not, failed to show the progressive increase in serum oxytocinase, urinary oestrogen and serum HSAP seen in the group of patients delivered of normal infants." Results of comparing the 3 methods of intrauterine fetal growth retardation diagnosis are also presented. Serum oxytocinase was found to be the best method of prediction with the estimation of serum HSAP thought to be of the least value. However, these latter estimations were performed on fewer patients. "By combining the urinary oestrogen and serum oxytocinase results into a single discriminant function, normal fetal growth was predicted in 33 out of 37 patients and intrauterine fetal growth retardation in 21 out of 22 patients studied between 34 to 40 weeks gestation." Implications are discussed.

313. Pildes, Rosita S.: "Infants of Diabetic Mothers," *New England Journal of Medicine*, 289:902-904, October 25, 1973.

Aspects discussed include clinical manifestations, pathophysiology, therapy, and prognosis.

314. Pildes, Rosita S.; Patel, Daksha A.; and Nitzan, Menachem: "Glucose Disappearance Rate in Symptomatic Neonatal Hypoglycemia," *Pediatrics*, 51:75-82, July, 1973.

The rate of glucose disappearance was studied in 11 hypoglycemic and 8 control neonates all of whom received an injection of intravenous glucose as explained. The infants and the methods used are explained. Results are presented with regard to the glucose disappearance rates, the plasma insulin responses and the plasma growth hormone responses during the test period. Findings indicated a significantly higher percentage disappearance rate per minute in the hypoglycemic infants compared to the controls. Hyperinsulinemia was present in 6 of the 11 hypoglycemic newborns. After the injection, the plasma growth hormone response increased to significantly higher values in the hypoglycemic infants than it did in the control infants.

315. "Pinpointing High-Risk Pregnancies," *Medical World News*, 14,80F+80H, December 14, 1973.

Reported is the work of Dr. John C. Hobbins and associates of the Yale University School of Medicine on a simplified method of screening high risk pregnancies and monitoring fetal distress by measuring human chorionic somatomammotropin (HCS). Their findings indicate that such a described inexpensive technique is particularly valuable in detecting postmaturity syndrome and intrauterine growth retardation.

316. Piomelli, Sergio; Davidow, Bernard; Guinee, Vincent F.; Young, Patricia; and Gay, Giselle: "The FEP (Free Erythrocyte Porphyrins) Test: A Screening Micromethod for Lead Poisoning," *Pediatrics*, 51:254-259, February, 1973.

This test is described, and the results of evaluating the relationship between findings on the FEP test and the whole blood Pb level "in 1,038 blood specimens submitted to the New York City Department of Health Bureau of Laboratories for Pb analysis" are presented. These results indicate that "the FEP test provides a biological indicator of undue lead absorption, suitable for rapid screening of children for lead poisoning."

317. Podoba, Vierka; Rizkallah, Tawfik H.; and Kelly, William G.: "Radioimmunoassay for Estrogens in Maternal Blood in Late Pregnancy: Values for Normal and Complicated Pregnancy," *American Journal of Obstetrics and Gynecology*, 117:321-330, October 1, 1973.

Estrogens were measured by means of described radioimmunoassay in the plasma of women having normal and complicated pregnancies. The estrogens were referred to as 'immunoreactive estriol,' and results were compared to levels of total estriol established in other research. The immunoreactive estriol values were found to rise more rapidly with gestational age than did those of total estriol. Also, the immunoreactive estriol was seen to clear from the maternal plasma faster after delivery than did total estriol. Findings are separately presented regarding those women having prolonged gestation, gestational diabetes, class B diabetes, pre-eclampsia, and essential hypertension. "The concentration of immunoreactive estriol in blood declined in some cases of complicated pregnancy and was undetectable in women with a hydatidiform mole, and anencephalic fetus, and a dead fetus." "The results also indicate that this radioimmunoassay for estriol and related estrogens is suitable as a routine determination and may provide a more sensitive means of assessing fetal well-being than do conventional assays."

318. Poland, Betty J., and Ash, Katherine A.: "The Influence of Recent Use of an Oral Contraceptive on Early Intrauterine Development," *American Journal of Obstetrics and Gynecology*, 116:1138-1142, August 15, 1973.

Studied were 106 fetuses from spontaneous abortions by women "who had used an oral contraceptive within 6 months of conception." These specimens were compared with those from 258 women "who had never used an oral or chemical method of contraception." A significantly higher incidence of abnormal specimens was found in the "'pill' group." The abnormal specimens were subdivided into "those with systemic anomalies and those with growth disorganization." Systemic anomalies were of similar incidence in the 2 groups of patients, but there was a significantly higher incidence of growth disorganization in the abnormal specimens of the pill group. "The increase in the incidence of developmentally abnormal specimens from patients who used oral contraceptives was because of an increase in specimens showing lethal growth disorganization." Other findings are reported, and the specimens having growth disorganization are further described.

319. Potter, Patricia, and Harryman, Susan: "Physical and Occupational Therapy for the Handicapped Child," *Pediatric Clinics of North America*, 20:159-176, February, 1973.

Discussed initially in this article are the referral for therapy and the training of parents in home treatment methods. Then considered are the therapeutic procedures employed at the various age levels. The general management, feeding, head control, and rolling over techniques are explained for usage with infants functioning at the level of 0 to 16 months of age, and the use and value of infant chairs are described. Techniques employed to aid infants ages 6 months to 1 year and children ages 1 to 2 years are also discussed.

320. Powell H.; Swarner, O.; Gluck, L.; and Lampert, P.: "Hexachlorophene Myelinopathy in Premature Infants," *Journal of Pediatrics*, 82:976-981, June, 1973.

When the brains of 69 infants, who had died during the perinatal period, were examined as described, it was found that 7 of them showed described spongiform changes in the myelinated tracts of the brainstem. "This type of myelinopathy consistently develops in experimental animals after hexachlorophene intoxication." Case reports are presented on these 7 infants. Four factors are listed and discussed which "were considered to contribute to the development of the spongiform myelinopathy." These are prematurity, low birth weight, multiple exposures to hexachlorophene (6 of the 7 infants had 9 or more exposures), and "the presence of dermal rashes, abrasions, or wounds."

321. Powers, William F.: "Twin Pregnancy; Complications and Treatment," *Obstetrics and Gynecology*, 42:795-808, December, 1973.

Aspects discussed include the mortality and morbidity associated with twin pregnancy, the early detection of twins and the value of such early diagnosis, the question of "why twins deliver early?," and various proposed interventions in twin pregnancy. A lengthy bibliography follows the article.

322. Poznanski, Elva O.: "Emotional Issues in Raising Handicapped Children," *Rehabilitation Literature*, 34:322-326+, November, 1973.

Discussed are the common emotional issues facing the families of physically handicapped and mentally retarded children. Acceptance by the physician of the many culturally unacceptable feelings which parents of such children display "will do much to aid rapport between physician and family." The length of time needed for the family to adapt to the birth of a defective child is discussed as are the need for early physical maternal contact with the infant, the importance of accepting the visibility of the defect, and the often seen denial of the permanency of the defect by the parents. Parental feelings of guilt and anger, overprotection of the child and the purposes it serves, the problems of the handicapped adolescent and his family, the question of institutionalization, and the emotions of the siblings of handicapped children are among the other aspects considered.

323. Prechtl, H.F.R.; Theorell, K.; and Blair, A.W.: "Behavioural State Cycles in Abnormal Infants," *Developmental Medicine and Child Neurology*, 15:606-615, October, 1973.

The following 3 groups of abnormal infants were studied polygraphically regarding their behavioral state cycles: 1) neonates with Down's syndrome, 2) newborns with bilirubinemia, and 3) a group of high-risk infants "with at least seven unfavourable conditions in their pre- and perinatal histories and with clear symptoms of cerebral functional disturbances." Findings were compared to those of normal infants, reported in a previous study, and are presented for each of the abnormal groups separately. "Not unexpectedly, alterations from previously established normal values were found, as were differences in pattern between the groups." "The results of this study indicate clearly that polygraphic state-monitoring and quantitative analysis of state-length and state-percentage distribution in newborn infants may provide important clinical information. Conditions such as Down's syndrome, bilirubinaemia and the sequelae of high-risk pregnancies and deliveries led to distinct and characteristic alterations in the

regulation of state cycles; this suggests that polygraphy can add a new dimension to the assessment of functional neural integrity in young infants."

324. The President's Committee on Mental Retardation: *Screening and Assessment of Young Children at Developmental Risk*, Washington, D.C.: U.S. Gov't. Print. Office, [1973]. 70 pp.

Appearing in this volume are the "background papers" of this Conference which was held at Boston in October, 1972. Each presentor, in his contribution at the Conference, was asked to take either a primarily negative or a primarily affirmative position in his designated area on the question of early screening of children at developmental risk. Thus the presentations are termed "quasi-debates" and each involved 2 speakers. Each of the following 4 areas of early screening is considered in a "quasi-debate": physical, cognitive/intellectual, socio/emotional, and language. Reference lists appear after most contributions. A list of 14 "Recommendations," obtained from "a synthesis of recommendations from small work groups" at the Conference is included as is a "Summary" of the Conference.

325. Preston, Malcolm S.: "Psycholinguistics and the Evaluation of Language Function," *Pediatric Clinics of North America*, 20:79-88, February, 1973.

Some concepts in the assessment of speech and language function in children are presented as is a practical psycholinguistic model of language function. This model may act as a clinical base for the assessment of communication disorders. The process of language acquisition and the identification of communication disorders in children are discussed. In the area of identification, 5 questions are presented to aid in the identification process, and 3 common misconceptions concerning communication disorders are explained. The referring of a child by the pediatrician to a Speech and Hearing Center is also considered.

326. Queenan, John T., and Schneider, Jörg: "Practical Clinical Aspects of Rh-Prophylaxis," *Journal of Perinatal Medicine*, 1:4:223-234, 1973.

After the authors consider the historical aspects of both the Rh problem and the development of anti Rh immune globulin, they "review current international practices of rhesus immune prophylaxis, as well as outline some of the problems and potential solutions." Included in the discussion are the indications for rhesus prophylaxis, the quantitating of fetal hemorrhage, the dosage required, possible complications, and proper utilization of Rh immune globulin.

327. Quick, Alton; Little, Thomas L.; and Campbell, A. Ann: "Early Childhood Education for Exceptional Foster Children and Training of Foster Parents," *Exceptional Children*, 40:206-208, November, 1973.

Described is Project MEMPHIS (Memphis Educational Model Providing Handicapped Infant Services). "The major goal of the Project has been to develop training programs for exceptional foster children and their foster parents." "This goal has been translated into three primary objectives: 1. To intervene early to attempt adequate remediation of handicapping conditions. 2. To intervene sufficiently early to permit a more rapid acceptance of infants by prospective adopting parents. 3. To establish prototypic techniques of early intervention through foster parent training procedures." The child and his mother are seen once in a treatment center and once in the home each week for assessment, treatment, and planning.

328. Quinlivan, W.; Leslie, G.; Reynolds, William F.; Marralle, Tonia; Kabacy, George; Kent, Deryck; Sullivan, Herlinda; and Farrell, Richard C.: "An Evaluation of Multiple Tests and the Lecithin/Sphingomyelin Ratio for Determining Gestational Age," *American Journal of Obstetrics and Gynecology*, 116:1147-1151, August 15, 1973.

Several tests for gestational age were performed on 105 samples of amniotic fluid from 105 women at various stages of normal pregnancy. Methods are described. Creatinine content, optical density at 450 mμ, and the percentage of lipid cells were found to be "the most reliable tests on amniotic fluid for determining gestational age." These measures were combined with the height of the uterine fundus to produce an 8 point score based on mean measurements at weeks 36 and 38 of gestation. This method is explained and was found to have "correctly diagnosed fetal maturity relative to 36 weeks' gestation in 88 percent of cases." "The lecithin/sphingomyelin ratio correlated well with the point score and was accurate in determining gestational age in 92 percent of pregnancies." "It is proposed that the 8 point score be used to determine gestational age, as the results of the present study show that it has a higher degree of accuracy than any single test. The lecithin/sphingomyelin ratio, which was designed to show maturity of the fetal lung, also correlates well with gestational age and can be used to estimate maturity of the fetus."

329. Rafael, Berta: "Early Education for Multihandicapped Children," *Children Today*, 2:22-26, January-February, 1973.

The Early Education Project of United Cerebral Palsy of New York City, Inc. is described regarding its principles, objectives, and programs.

330. Rajan, Renga: "Amniotic Fluid Assays in High-Risk Pregnancy," *Clinical Obstetrics and Gynecology*, 16:313-328, March, 1973.

Recent research concerning amniotic fluid is reviewed including that concerning its contents and its usefulness in intrauterine evaluation and diagnosis.

331. Reinold, E.: "Clinical Value of Fetal Spontaneous Movements in Early Pregnancy," *Journal of Perinatal Medicine*, 1:1:65-69, 1973.

An ultrasonic experimental procedure is described by which it is possible to observe spontaneous fetal movements within the amniotic cavity. When this technique was used between the 10th and 20th weeks of pregnancy, 2 types of movements were observed. These are described. If no spontaneous movements were noted, an attempt was made to passively move the fetus as described. "The significance and value of these spontaneous movements was evaluated by comparing them both with the clinical diagnosis at the time of observation and the further course of pregnancy." Findings are reported. "This new method makes it possible to observe the fetus within the uterus and to conclude, at least when fetal spontaneous movements are absent, that the fetus is at risk."

332. "Research Investigations and the Fetus," *British Medical Journal*, 2:464-468, May 26, 1973.

Presented is a transcript of a tape-recorded presentation and discussion in which some of the problems of research investigations and the fetus were considered by R.W. Smithells, a pediatrician; R.W. Beard, an obstetrician; and a barrister.

333. Rhodes, Philip: "Obstetric Prevention of Mental Retardation," *British Medical Journal*, 1:399-402, February 17, 1973.

The role of the obstetrician in the prevention of brain damage is emphasized. The importance of early fetal development, the vulnerability of the embryo and fetus during differentiation, the influences of geography and social class on perinatal mortality and morbidity, and critical phases of fetal growth are among the factors discussed. Research on light-for-dates infants, on pregnancies resulting in small-for-dates infants, and on the relation of social factors to mental retardation is described. "There can be little doubt that the obstetrician has a very real part to play in the prevention of mental retardation, which is such an important problem today. He can do this at many phases of pregnancy and by his care in labour. He can also help to identify those mothers whose babies may be at special psychological and social risk in their early postnatal life. Above all he requires a very high index of suspicion of matters going wrong and then an intensification of his monitoring in pregnancy and in labour."

334. Richings, Jane: "Later Progress of Infants Who Received Transfusions in Utero for Severe Rhesus Haemolytic Disease," *Lancet*, 1:1220-1223, June 2, 1973.

Such progress is reported for 19 children, who had received intrauterine transfusions and who had been born between January, 1964 and December, 1968. Results of evaluation are presented concerning the children's growth, physical defects, neurological defects, hearing and vision, and intelligence. A chart provides additional perinatal information. All but 1 of the children were born before the 37th gestational week. Hydrops fetalis was present in 3. All but 1 child were found to have normal intelligence. One child had cerebral palsy with normal intelligence. "It is concluded that these preliminary results are acceptable considering the serious nature of the children's illness and their preterm birth."

335. Richmond, Julius B.: "The Family and the Handicapped Child," *Clinical Proceedings of Children's Hospital National Medical Center*, 29:156-164, July-August, 1973.

The process of adaptation that takes place within the family of a handicapped child is described. The author sees 3 stages of psychological adaptation. These are "1) disorganization," "2) reintegration," and "3) mature adaptation." The adaptive processes overlap and occur in combination. They include the processes of "denial," "guilt," "projection," and "dependency." These are individually discussed. Also considered are some of the ways of helping families to adapt.

336. Rie, Herbert E.; Hilty, Milo D.; and Cramblett, Henry G.: "Intelligence and Coordination Following California Encephalitis," *American Journal of Diseases of Children*, 125:824-827, June, 1973.

Intellectual and visual-motor functioning were evaluated in a group of 29 school-age children, who had had California encephalitis (CE) an average of 24 months prior to evaluation, and a similar number of control children. Results are compared. In 9 of the CE children pre- and post-illness measures were available and were compared. The data was also examined to determine any relationships between severity of illness and subsequent functioning and between the nature of the symptoms and subsequent functioning. The presence of focal neurologic signs was found to be critical in 6 listed ways. "No uniform effects of the illness were identified. The number of symptoms and laboratory findings during illness fails to correlate with the psychologic findings on follow-up. However, the presence of focal neurologic signs appears to be associated with higher performance IQs than verbal IQs (no instances of the opposite) and poorer visual-motor coordination."

337. Roberts, C.J., and Khosla, T.: "An Evaluation of Developmental Examination as a Method of Detecting Neurological, Visual, and Auditory Handicaps in Infancy," *British Journal of Preventive and Social Medicine*, 26:94-100, May, 1972.

Of concern in this study were 2 aspects of developmental examination as it relates to screening infants for handicaps: 1) the effectiveness of the examination, i.e., "the extent to which full developmental examination can detect neurological, auditory, and visual defects in infants" and 2) the redundancy of the examination, i.e., "the extent to which the number of observations made in the full developmental examination can be reduced...without seriously affecting the degree of effectiveness." A 4-part examination was conducted on 193 infants, ages 11 to 13 months, "whose mothers experienced toxaemia and/or antepartum haemorrhage during the related

pregnancy," and 193 matched controls. The total examination consisted of a developmental examination, a neurological examination, an auditory examination, and a visual examination. All are described as are methods of data analysis and findings. The results indicated "that developmental examination has only limited effectiveness when applied during infancy (i.e., in the study 92% of all subjects with neurological defect, but only 40% of subjects with abnormal hearing, and no infants with visual defects were classified as abnormal on the basas of a full developmental examination)." "Furthermore, there was clear evidence of considerable redundancy among component observations of the full developmental examination - a multiple regression analysis showed that 87% of the total variance of the aggregate developmental score derived from the five components of the full examination could be predicted from two component observations (gross and fine motor function) without reducing the levels of effectiveness for the individual categories of handicap quoted above." Findings are discussed.

338. Robinson, Arthur; Bowes, Watson; Droegemueller, William; Puck, Mary; Goodman, Stephen; Shikes, Robert; and Greenshur, Arnold: "Intrauterine Diagnosis: Potential Complications," *American Journal of Obstetrics and Gynecology*, 116:937-941, August 1, 1973.

Reported here are data from 128 consecutive patients who underwent anmiocentesis for intrauterine diagnosis between the 14th and 20th weeks of pregnancy. The indications for amniocentesis in these cases are listed as are the steps of the procedure followed. Of particular concern was the finding that 7.5% of the patients aborted 'spontaneously' after amniocentesis. These cases are reviewed, and other complications are discussed.

339. Robinson, H.P.; Chatfield, W.R.; Logan, R.W.; Tweedie, A.K.; and Barnard, W.P.: "A Scoring System for the Assessment of Multiple Methods of Monitoring Fetal Growth," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:230-235, March, 1973.

Research on the various methods of monitoring fetal wellbeing is reviewed. A scoring system was used to assess the results of monitoring 45 patients who "were thought to be at risk from placental insufficiency." These patients were serially monitored by use of sonar biparietal cephalometry, 24-hour urinary estriol assays, and measuring the activities of serum oxytocinase, total alkaline phosphatase, and heat-stable alkaline phosphatase. These methods and the scoring system are explained as are the results of monitoring by use of the individual tests and by use of various combinations of the tests. "It was found that a combination of sonar cephalometry and 24-hour urinary oestriol assays gave the most reliable prediction of intrauterine growth retardation."

340. Robinson, Richard O.: "The Frequency of Other Handicaps in Children With Cerebral Palsy," *Developmental Medicine and Child Neurology*, 15:305-312, April, 1973.

A total of 298 neurologically handicapped children were comprehensively assessed, and findings based on this assessment with regard to sensory, motor and learning deficits are reported. Of the 298 children, 64 had no such deficits. Eighty of the children had cerebral palsy, and detailed findings on these children are presented. "Two previously unsuspected observations emerged. (1) When the prevalence of associated deficits, grand mal attacks, microcephaly, and a bad prenatal or perinatal history are analysed by type of cerebral palsy, it becomes evident that types fall into two main groups of motor abnormality, for the cases of spastic tetraplegia and

of dystonic choreoathetoid tetraplegia show a much higher frequency of severe associated deficits (visual, auditory, motor and learning handicap) and of a bad prenatal and perinatal history than do cases of spastic hemiplegia, spastic diplegia and ataxic cerebral palsy. This finding may have significance for the aetiology of these various types of cerebral palsy. (2) Deafness does not commonly follow perinatal hypoxia and only does so when there are at least two other associated important deficits, suggesting that to produce deafness, perinatal hypoxia has to be of a relatively uncommon severity." An appendix contains definitions of terms.

341. Roopnarinesingh, Syam: "Amniotic Fluid Creatinine," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:611-615, July, 1973.

Serial creatinine estimations were conducted as described in normal and pre-eclamptic pregnant patients. Creatinine levels in amniotic fluid were found to progressively increase as pregnancy advanced in both groups of patients. Creatinine levels in amniotic fluid were found to be significantly higher than such levels in both maternal serum and cord blood. A linear relationship was found between amniotic fluid creatinine and maternal serum creatinine, and this correlation was "stronger in normal pregnancy than in pre-eclampsia." "Values in patients with severe pre-eclampsia were found to be significantly greater than those in patients with mild pre-eclampsia at corresponding periods of gestation." Results are discussed.

342. Rooth, Gösta: "The Time Factor in Fetal Distress," *Journal of Perinatal Medicine*, 1:1:7-12, 1973.

The 2 terms, hypoxia and hypoxemia, are differentiated. Then presented is "the theoretical background for the fetal pH drop when the fetal oxygen supply is deficient." The oxygen stores in the red cells and the glycogen stores of the fetus are both discussed as being the sources of fetal energy when the oxygen supply is deficient. Findings indicate "that about 60 per cent of the oxygen deficit is drawn from oxygen stores and the rest from anoxic metabolism." On the basis on this data, curves were then drawn and are presented to show the fetal pH, So_2, base deficit, and Pco_2 calculations at 2% oxygen deficit and the changes in pH that occur when there is a 2, 4, and 10% oxygen deficiency. "If the fetal scalp oxygen saturation or pH are measured at known time intervals the amount of oxygen deficiency may be estimated" from such curves. "Furthermore, the survival time of the fetus may be estimated if it is assumed that death or at least serious disturbance occurs when the pH is below 7.00."

343. Rosen, Mortimer G.; Scibetta, Joseph; Chik, Lawrence; and Borgstedt, Agneta D.: "An Approach to the Study of Brain Damage," *American Journal of Obstetrics and Gynecology*, 115:37-47, January 1, 1973.

In a described study fetal electroencephalography (EEG) was used to monitor over 300 fetuses during labor. Explained are the technical apparatus and methods used. The fetal EEG technique and the nonobstetric EEG techniques are compared. Results indicated that successful readings were obtained in over 50% of the more than 300 fetuses. Two general conditions were discerned during labor. The first situation is termed 'transient' events while the second category is termed 'nontransient' fetal EEG events. These 2 terms "refer only to EEG seen during the period of monitoring." Then described and pictured are the transient fetal EEG changes seen during patterns of cardiac deceleration, those transient EEG changes seen during forceps application,

the nontransient EEG changes seen as 'sharp waves,' and those nontransient EEG changes seen as low voltage recordings. Then presented are the preliminary follow-up results on a small group of infants who were followed to 1 year of age. Eight of these babies were neurologically abnormal at age 1 year. Certain EEG characteristics were found in these infants and are described. "The results of the program suggest basic standards for use in clinical research and guidelines for interpreting the fetal tracings."

344. Rosenberg, Leon A.: "Psychological Examination of the Handicapped Child," *Pediatric Clinics of North America*, 20:61-77, February, 1973.

Group-administered tests, individually-administered tests, and other means of measuring the intellectual functioning of the school-age handicapped child are discussed. Also considered is the psychological evaluation of the preschool-age child and the infant. Then discussed in brief are some of the factors involved in the intellectual assessment of the following special groups: those with sensory handicaps, those with motor handicaps, the non-speaking child, and the hyperkinetic child.

345. Roux, J.F.; Nakamura, J.; and Brown, E.G.: "Further Observations on the Determination of Gestational Age by Amniotic Fluid Analysis," *American Journal of Obstetrics and Gynecology*, 116:633-638, July 1, 1973.

Amniotic fluid samples were obtained prior to delivery from 151 women at various stages of gestation. With methods described, the concentrations of lecithin, sphingomyelin, creatinine, lipids, and fat cells were then determined in these samples. Findings were correlated with fetal age and lung complications. Individually examined regarding their fat cell content and the lecithin/sphingomyelin ratio were the amniotic fluid, vernix, amniotic membranes, fetal skin, and aspirates from the pharynx of the neonates. Results are presented concerning the correlations found between the estimation of the fetal age and the development of the infant at birth; the L/S concentration and the complications seen in the infant; the creatinine, fat cells, and total lipid concentrations compared with the L/S ratio; and findings regarding the origins of fat cells, lecithin, and sphingomyelin. Findings are discussed and compared to those of other studies.

346. Roux, Jacques F.; Nakamura, Junichi; and Brown, Edwin: "Assessment of Fetal Maturation by the Foam Test," *American Journal of Obstetrics and Gynecology*, 117:280-283, September 15, 1973.

This test was performed using amniotic fluid samples from 66 high-risk pregnancies. Methods are described. The test was 'positive' in 41 cases and in these cases indicated a mature fetus not associated with hyaline membrane disease. A 'negative' result was seen in 15 cases, and the fetus was found to be premature in 73.3% of these cases. In 10 cases there was an 'intermediate' result, and in 80% of these cases the fetus was mature and not associated with hyaline membrane disease. "Although a positive foam test correlated significantly with the concentration of amniotic fluid lecithin, tests with positive, intermediate, and negative results were found at lecithin concentrations lower than 180 mg percent." "The foam test is easy, fast, and economical to perform and should replace the lecithin-sphingomyelin ratio determinations which are more costly and cumbersome to perform and do not appear to be significantly more accurate when compared to the foam test in predicting fetal lung maturation."

347. Rubaltelli, F.F., and Largajolli, G.: "Effect of Light Exposure on Gut Transit Time in Jaundiced Newborns," *Acta Paediatrica Scandinavica*, 62:146-148, March, 1973.

In order to study this effect, the Carmine Red test was performed on 13 full-term healthy neonates (I), on 12 full-term jaundiced neonates born before and during phototherapy treatment (II), and on 10 full-term healthy neonates who were given 48 hours of phototherapy treatment (III). The intestinal transit time was found to be statistically accelerated in the Group II infants after phototherapy as compared to the infants in Groups I and III. "The increased rate of intestinal transit produced by phototherapy is probably due to the action of the photo-decompositon derivatives of bilirubin, which are excreted during phototherapy."

348. Rushton, D.I.: "The Placenta - An Environmental Problem," *British Medical Journal*, 1:344-348, February 10, 1973.

Considered are "some of the genetic and environmental factors which act in utero to clarify the role of placental disease in clinical obstetrics," placental pathology, and methods of assessing placental function.

349. Scanlon, John W.: "How is the Baby?: The Apgar Score Revisited," *Clinical Pediatrics*, 12:61-63, February, 1973.

Dr. Scanlon discusses the uses and limitations of the Apgar score in this commentary. "What we are suggesting, really, is the use of the pediatrician's stock in trade: careful, close, intelligent observation of the patient. These observations, and their interpretation, will serve to complement the more acute but less sensitive measurements of the Apgar score. In summary, the Apgar score has stood the test of time as an index of acute, severe neonatal impairment at birth. More sensitive clinical measures, plus an understanding of the Apgar's limitations, will enable the clinician to better answer the question posed by our title."

350. Scanlon, John W., and Leikkanen, Marsha: "The Use of Fluorescein Powder for Evaluating Contamination in a Newborn Nursery." *Journal of Pediatrics*, 82:966-971, June, 1973.

A study is presented in which "an inexpensive, rapid, nonbacteriologic surveillance technique which employs fluorescein powder as a marker" was used to evaluate nursery contamination. This fluorescein powder can be observed by ultraviolet light. The powder and equipment used and a devised fluorescence rating system are explained. Findings are reported when the powder was used in the delivery room, nursery room, circumcision room, and in isolation rooms. "The inability of current nursing practices to prevent the spread of the contaminant (fluorescien powder) is discussed."

351. Scarr-Salapatek, Sandra, and Williams, Margaret L.: "The Effects of Early Stimulation on Low-Birth-Weight Infants," *Child Development*, 44:94-101, March, 1973.

Thirty infants, born to disadvantaged mothers and having low birth weights (< 1800 g), were alternately assigned to either an experimental (E) or a control (C) group. These infants and their mothers are described and the characteristics of the 2 groups are compared. The E infants participated in a described stimulation program for the first year of their lives which was designed to enhance sensorimotor development. "The E group received visual, tactile, and kinaesthetic stimulation during 6 weeks in the nursery. Weekly home visits to improve maternal care were made until the infants reached 12 months of age." The C group received standard care for low birth weight newborns. The infant assessment procedures and other evaluation methods used are described. "Newborn tests at 4 weeks and Cattell IQ scores at 1 year indicated greater developmental progress for the E than for the C group." Several clinical observations which were made during the study are discussed, and implications are presented.

352. Schain, Richard J.; Watanabe, Kathy; and Harel, Shaul: "Effects of Brief Postnatal Fasting Upon Brain Development of Rabbits," *Pediatrics*, 51:240-250, February, 1973.

Previous research on early malnutrition is reviewed. A study of the effects of total fasting during the first 2 days of life on the brain development in the rabbit is then presented. Reasons for use of the rabbit in the study are explained. After birth, littermates were paired (17 pairs) according to birth weight and placed in either the fasting or control group. Treatment, brain examination, and analytical methods are presented. With regard to findings, the normal brain and body growth of the rabbit is described and contrasted with the body growth of the rabbits after fasting and the brain development of the paired rabbits at 60 days. "Those fasted

animals whose body weight was more than 25% below the control littermate at 12 days of age exhibited a significant reduction of brain weight and constituents at 60 days of age (group II)." "Those fasted animals whose body weight nearly caught up to the controls after the fast did not manifest differences of brain size and composition at 60 days of age (group I)." These and other findings are discussed, and speculation on the findings and relevance to the human infant are considered. "When adjusted for life span, the timetable of resumption of weight gain in fasted rabbits is comparable to the time required for regaining birth weight of very low birth weight human infants. These data indicate that the degree of body weight catch-up after a brief postnatal fast will affect subsequent brain development in the rabbit, a species which, like the human, is a perinatal brain developer."

353. Scher, J.; Hailey, D.M.; and Beard, R.W.: "The Effects of Diazepam on the Fetus," *Journal of Obstetrics and Gynecology of the British Commonwealth*, 79:635-638, July, 1972.

The effects on the fetus of the intravenous injection of 20 mg of diazepam during labor were studied in 12 patients. Within 2 minutes of the injection, there was a loss of beat-to-beat variation in the fetal heart rate pattern. This effect lasted an average of 65 minutes. No significant alteration in either the fetal pH or the Apgar score at birth was noted. Findings indicated that a rapid placental transfer of diazepam occurred.

354. Scherzer, Alfred L.: "Current Concepts and Classification of Cerebral Palsy," *Clinical Proceedings of Children's Hospital National Medical Center*, 29:143-147, July-August, 1973.

The condition of cerebral palsy is described, and its forms are classified. Also discussed are the various facets in the early developmental evaluation of the young child, abnormalities in postural reflex behavior in infancy, problems that develop early in the management and learning of such children, and a program for the cerebral palsied infant that includes both management and treatment.

355. Schiøttz-Christensen, E.: "Role of Birth History in the Aetiology and Course of Febrile Convulsions. A Twin Study," *Neuropädiatrie*, 4:238-244, July, 1973.

Studied were 1,631 pairs of twins of which 64 pairs had a history of febrile convulsions (FC) in either 1 or both twins. This study took into account the fact that "twins are known to be exposed, more than non-twins to pre- and perinatal pathology." "In 48 pairs, discordant with respect to FC, there were no significant differences between twins with FC and their healthy co-twins as regards birth weight, birth order, presentation, assisted delivery or perinatal condition." There was a 3% incidence of FC in this total twin population. The clinical characteristics of those twins having had FC are described. Only a 2.6% incidence of subsequent epilepsy was found. These results are discussed and related to findings from other studies on this subject.

356. Schlesinger, Edward R.: "Neonatal Intensive Care: Planning for Services and Outcomes Following Care," *Journal of Pediatrics*, 82:916-920, June, 1973.

Discussed are the changes that have taken place in neonatal intensive care during the last decade, the regionalization of neonatal intensive care services, the decline of

neonatal mortality rates in some of the individual centers and in some regional programs, and findings regarding the outcome of the surviving infants.

357. Schneider, Jan: "Changing Concepts in Prenatal Care," *Postgraduate Medicine*, 53:91-97, June, 1973.

The need for reevaluation of current practices in this area is stressed. A model program of prenatal care is presented that contains 3 necessary elements: "preventive intervention, health education, and research and learning in problems of pregnancy." Program individualization, more efficient use of facilities and personnel, and evaluation of the program are required.

358. Schneider, Jan: "Repeated Pregnancy Loss," *Clinical Obstetrics and Gynecology*, 16: 120-133, March, 1973.

Causes of fetal loss are discussed, statistics are reviewed, factors associated with repeated pregnancy loss are considered, and intervention is seen as the necessary element in the prevention of repeated pregnancy loss.

359. Schwarcz, R.; Althabe, O.; Belitzky, R.; Lanchares, J.L.; Alvarez, R.; Berdaguer, P.; Capurro, H.; Belizan, J.M.; Sabatino, J.H.; Abusleme, C.; and Caldeyro-Barcia, R.: "Fetal Heart Rate Patterns in Labors With Intact and With Ruptured Membranes," *Journal of Perinatal Medicine*, 1:3:153-165, 1973.

FHR patterns were monitored as described in 17 labors where the membranes were artificially ruptured at between 4-5 cm cervical dilatation and in 20 labors where the membranes were allowed to remain intact "at least until full cervical dilatation had been reached." The incidence of type II dips was found to be very low in both groups. "The influence of three factors on the incidence of type I dips is analyzed quantitatively: 1) Status of the membranes (intact or ruptured); 2) station of the fetal head (before or after engagement), and 3) loop of cord around the fetal neck (present or absent)." Results are presented and support the "hypothesis that the bag of waters protects the fetal head from the uneven compression received during uterine contraction." On the basis of the findings it is thought "advisable to reevaluate the common obstetrical practice of rupturing membranes artificially early in the first stage of labor, as a routine procedure in the management of labor."

360. Scibetta, Joseph J.; Fox, Harold E.; Chik, Lawrence; and Rosen, Mortimer G.: "On Correlating the Fetal Heart and Brain in the Sheep. I. Following Recovery From Operation. II. Following Maternal Hemorrhage," *American Journal of Obstetrics and Gynecology*, 115:946-952, April 1, 1973.

In order to investigate the association between the fetal heart rate (FHR) and the fetal electroencephalogram (FEEG) during maternal stress and thus, to assess the predictive value of these parameters in the diagnosis of fetal status, fetal brain wave changes that occurred during recovery from described surgery and fetal heart rate and brain wave changes that occurred during acute maternal hemorrhage were studied in 7 fetal lambs of 5 ewes. All methods are described, and results from each experiment are presented separately. Findings are discussed. "The results indicate that during acute maternal hemorrhage in the absence of labor, fluctuations

in FHR are more important than actual rate, and that visual changes in FEEG occur early and persist at a time when FHR may be within the previously recorded ranges. This would suggest that FHR as a single criterion would at times not totally describe the fetal physiological state." "It is apparent that monitoring of FEEG in animal and human studies represents the addition of another sensitive measurement of the fetal environment."

361. Scott, C. Ronald; Teng, Cecilia Chiang; Sagerson, Ronald N.; and Nelson, Thomas: "Amino Acid in Amniotic Fluid: Changes in Concentrations During the First Half of Pregnancy," *Pediatric Research*, 6:659-663, August, 1972.

In order "to determine the concentrations of free amino acids in amniotic fluid and to determine which amino acids would offer the best correlation with fetal age," an investigation was conducted in which 22 amino acids in amniotic fluid were quantitated from 24 women early in pregnancy. The amniotic fluid was obtained during the process of therapeutic abortion, and the gestational age of the fetus was assessed by crown-rump measurement. A total of 14 amino acids were found to correlate significantly with gestational age. "Lysine showed the strongest correlation ($P \ll 0.001$) and had a correlation coefficient of 0.89." "The results of this study would suggest that early in pregnancy the concentrations of amino acids in amniotic fluid may prove to be an independent and reliable indicator of fetal age."

362. Seppälä, Markku, and Ruoslahti, Erkki: "Alpha Fetoprotein in Maternal Serum: A New Marker for Detection of Fetal Distress and Intrauterine Death," *American Journal of Obstetrics and Gynecology*, 115:48-52, January 1, 1973.

Radioimmunoassay was used to determine maternal serum alpha fetoprotein (AFP) values in the latter half of pregnancy in 143 women of whom 65 had normal pregnancies and 78 were considered high-risk pregnancies. Levels were found to vary from 53 to 550 ng per milliliter in the normal pregnancies with 530 ng per milliliter set as the upper normal level. "In high-risk pregnancies, the AFP test correctly predicted 60 per cent of the cases with fetal distress and 92 per cent of the cases with normal fetoplacental function. If maternal AFP levels were above 800 ng per milliliter, fetal distress or intrauterine fetal death occurred in 85 per cent of the cases, and intrauterine fetal death occurred in all 6 cases where the maternal AFP concentration was higher than 1,075 ng per milliliter. The increase in maternal AFP took place before the fetal death." "The results suggest that the AFP test contributes to the biochemical detection of fetal distress and intrauterine death."

363. Seppälä, Markku, and Ruoslahti, Erkki: "Alpha-Fetoprotein in Rh-Immunized Pregnancies," *Obstetrics and Gynecology*, 42:701-706, November, 1973.

Radioimmunoassay was used to measure alpha-fetoprotein (AFP) levels in 48 serum and 28 amniotic fluid samples from Rh-immunized pregnant women. Findings are contrasted to those from a group of normal pregnancies. Results are presented separately for the AFP concentrations found in the maternal serum and in the amniotic fluid. "The circulating AFP levels in immunized patients were higher than in normal pregnant women. A pronounced increase in the AFP levels occurred in severe Rh-immunization associated with intrauterine fetal death, and elevated AFP levels were detected preceding the fetal death. Instead of the expected decrease, amniotic fluid AFP concentrations increased in 2 cases of severe fetal erythroblastosis. The results indicate that AFP levels in serum and amniotic fluid may provide a further marker in the monitoring of Rh-immunized pregnancies."

364. Sever, John L.: "Effects of Infections on Pregnancy Risk," *Clinical Obstetrics and Gynecology*, 16:225-234, March, 1973.

Discussed is the frequency of infections in pregnant women and the various perinatal infections which may affect the fetus and/or newborn. These include the cytomegalovirus infections, Herpesvirus Hominis type II, rubella, enteroviruses, and bacterial infections. The usefulness of immunoglobulin determinations for detecting perinatal infections is also considered.

365. Shaffer, David: "Psychiatric Aspects of Brain Injury in Childhood: A Review," *Developmental Medicine and Child Neurology*, 15:211-220, April, 1973.

In this review article the following questions are posed and discussed: (1) "Does brain injury increase the likelihood of psychiatric disorder?"; (2) "Which factors make the development of psychiatric disorder most likely?"; (3) "Are certain types of psychiatric syndrome pathognomonic of brain injury?"; and (4) "How often is psychiatric disturbance associated with organic disorder of the CNS?". Mechanisms contributing to psychiatric disturbance in brain damaged children are considered as are the prognosis and treatment of such distrubance.

366. Sharma, Raj K.; Ente, Gerald; Collipp, Platon J.; Maddaiah, Vaddanahally T.; and Rezvani, Iraj: "A Complication of Phototherapy in the Newborn: The 'Bronze Baby'," *Clinical Pediatrics*, 12:231-234, April, 1973.

A case is presented of an infant to whom phototherapy was administered for neonatal hyperbilirubinemia after which he "developed a pronounced change in skin, blood, and urine color (dark grey-brown) which persisted for 15 days." His development has been normal.

367. Sharp, Frank; Carty, Matthew J.; and Young, Hamish: "The Reversibility of the Effects of Hypoxia on Hydroxysteroid Dehydrogenase (HSD) Activity in Placental Villi Maintained in Organ Culture," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:325-328, April, 1973.

An organ culture study, using hydroxysteroid dehydrogenase (HSD) histochemical techniques as described, was conducted to determine "whether, by re-oxygenation, changes in placental villi induced by an antecedent period of hypoxia could be reversed." Placentae were collected from uncomplicated pregnancies, and placenta villi were treated as described. Some tissue fragments were placed in an explained organ culture incubation system. Of this tissue, some represented "the hypoxic baseline tissue" while other was treated so as to represent "the postoxygenation specimen." Each specimen was then analyzed using described histochemical methods. A total of 43 cultures were studied. Reversal of the hypoxic changes, as defined, was acheived using 17β-HSD substrates, but the number of cultures showing the reversal was related to the duration of the preceding hypoxia. "No reversal was achieved using a 3β-HSD substrate." These results and their implications are discussed.

368. Shelley, Sue A.; Takagi, L. Raul; and Balis, John U.: "Assessment of Surfactant Activity in Amniotic Fluid for Evaluation of Fetal Lung Maturity," *American Journal of Obstetrics and Gynecology*, 116:369-376, June 1, 1973.

Previous research in this area is reviewed. Described is a simple method "which consistently detected surfactant activity in amniotic fluid from term pregnancies." The amniotic fluid was mixed with the gel-filtration medium Sephadex as explained. The method was employed on amniotic fluid samples obtained from 54 uncomplicated term pregnancies, 6 pregnancies at delivery resulting in healthy premature infants, and 6 pregnancies at delivery resulting in infants who developed the respiratory distress syndrome. The 54 samples from the normal term pregnancies and those obtained at delivery of the 6 normal premature infants were found to be surface active, while those samples obtained at delivery of the RDS infants showed "little or no surface activity." The findings indicated that this described "simple, rapid method provides consistent and reliable information relating to the state of surfactant function of the developing fetal lung and that this method may effectively screen prior to delivery infants at risk of developing the respiratory distress syndrome."

369. Shenker, Lewis: "Clinical Experiences With Fetal Heart Rate Monitoring of One Thousand Patients in Labor," *American Journal of Obstetrics and Gynecology*, 115: 1111-1116, April 15, 1973.

The records of 1000 patients, who had been electronically monitored regarding fetal heart rate during labor, were reviewed. Of these 1000 patients, 334 were considered to be high-risk and, therefore monitored with indication, and 666 were monitored electively. Results with these 2 groups were compared. Findings indicated that although 4 times as many women who had late decelerations in fetal heart rate had babies with Apgar scores below 6 at 1 minute than did those patients who showed no periodic changes in fetal heart rate, 68% of those babies who were shown to have had late decelerations had Apgar scores above 7. Electronic monitoring was felt to be a good tool for the early indication of fetal anoxia. "It should be carried out in all patients receiving oxytocin during labor to avoid episodes of fetal anoxia." Results of this and other studies are discussed regarding the accuracy of fetal heart rate monitoring in predicting the condition of the newborn, the monitoring of high-risk patients, and the role of monitoring in normal patients.

370. Sheridan, Mary: "The STYCAR Graded-Balls Vision Test," *Developmental Medicine and Child Neurology*, 15:423-432, August, 1973.

Terms are defined, and the history of the assessment of visual competence in young normal children and handicapped children is reviewed. Then described are the development of and the procedures involved in 3 vision tests which make up the Sheridan Tests for Young Children and Retardates (STYCAR). These 3 are "the rolling balls test," "the mounted balls test," and "the peripheral field test." Conclusions from administering the tests to more than 850 handicapped children under 12 years of age and to over 400 normal children from 6 months to 2 1/2 years of age are reported. Also explained is the relating of the ball sizes to Snellen letter equivalents. When the tests are "correctly applied and interpreted, they do provide reliable information not hitherto available to field-working paediatricians regarding children's everyday visual competence, particularly for distance, for differences between the two eyes tested separately, and for field defects." "They are designed to form part of comprehensive paediatric developmental assessment. They are <u>not</u> intended for large-scale use by ancillary personnel, detached from other aspects of developmental assessment."

371. Siegel, Morris: "Congenital Malformations Following Chickenpox, Measles, Mumps, and Hepatitis," *Journal of American Medical Association*, 226:1521-1524, December, 1973.

A controlled study on this subject was conducted in New York City "based on maternal infections occurring from 1957 to 1964, and reported by physicians to the Department of Health." Women having these viruses and their matched controls were observed during pregnancy, and their offspring were followed for 5 years to determine the existance of any congenital malformations. Results were based on 372 viral cases and 393 controls. "Major congenital defects occurred in each viral group, but the malformations were equal in frequency and often similar in type to those observed among comparable controls for the respective viral groups. Consequently, the malformations that occurred could not be attributed directly to the associated diseases under study."

372. Sillanpää, Matti: "Medico-Social Prognosis of Children With Epilepsy," *Acta Paediatrica Scandinavica*, Supplement 237, 1973. 104 pp.

This is a report on an epidemiological study of 245 epileptic children, ages 0 to 15 years of age, who had been hospitalized for recurrent epileptic seizures during the period 1961 to 1964 in Finland. Before the objectives of the study are listed, the literature is reviewed regarding such aspects of epilepsy as the prevalence and incidence, the medical and social prognosis, and mortality. The children studied and the methods of examination are then described. The patients were followed for a mean period of 129 months and the collected data was statistically analyzed. Results were compared to those from a control series. Detailed results are presented under the categories of prevalence and incidence, demographic and medical data, seizure data, prognosis for seizures, social prognosis, and mortality. The findings are discussed and summarized. "The present sample did not substantially differ from previous ones in various aspects, such as sex distribution (54.7 per cent males), age at onset (60.6 per cent at the age of 0-3 years), suggested aetiology (in 53.1 per cent either organic or both organic and hereditary), neurological state (in 36 per cent abnormal gross motor state, in 52.7 per cent intelligence level 85 or less and in 39.6 per cent 51 or less) or different types of epilepsy (in 53.5 per cent grand mal, in 46.5 psychomotor and in 4.9 per cent genuine petit mal fits)." A bibliography of 339 citations and 3 appendices are included.

373. Slob, A. Koos; Snow, Catherine E.; and de Natris-Mathot, Els: "Absence of Behavioral Deficits Following Neonatal Undernutrition in the Rat," *Developmental Psychobiology*, 6:177-186, March, 1973.

When food-deprived rates received maternal care from a foster mother, who carried on all maternal care except lactation, and lived in litters of the same size as well-fed controls, they were not found to differ from the well-fed control rats "in the open-field test, in a test of motor coordination, and in 2 learning tasks." They were found to be "more active than controls in a residential plus maze," however. "Females showed less effect of food deprivation on body growth, but a much greater effect on activity, than males. These findings suggest that early undernutrition when not confounded with social and maternal deprivation may have more restricted effects on adult behavior than has been previously believed." All methods, tests, and results are described.

374. Smith, Arnold L., and Scanlon, John: "Amnionic Fluid D(-)-β-Hydroxybutyrate and the Dysmature Newborn Infant," *American Journal of Obstetrics and Gynecology*, 115: 569-574, February 15, 1973.

Amniotic fluid samples were obtained from 53 women who delivered normal infants and from 22 women who delivered dysmature infants, as defined. The concentration of D(-)-β-hydroxybutyrate (βOH) in these samples was then determined with the methods explained. "The mean concentration of the normal pregnancy was 0.114 mM as opposed to 0.211 mM in the dysmature pregnancy." An amnionic fluid BOH concentration of greater than 0.5 mM was always found to be associated with the birth of a dysmature infant, but this was true in only 20% of the infants considered to be dysmature. Amnionic βOH levels rose slightly in the last month of normal pregnancy. These and other findings are contrasted to those of other researchers, and possible future studies are discussed.

375. Smith, David H.; Ingram, David L.; Smith, Arnold L.; Billes, Floyd; and Bresnan, M.J.: "Bacterial Meningitis: A Symposium," *Pediatrics*, 52:586-600, October, 1973.

In Part I of this Symposium Dr. Ingram discusses "The Epidemiology of Meningitis in Children." In Part II Dr. A. Smith is concerned with the "Diagnosis of Bacterial Meningitis." Dr. Gilles describes "Morbid Anatomical Changes" in Part III, and Dr. Bresnan discusses the "Neurological Aspects: Their Diagnosis and Treatment" in Part IV. "Treatment of Bacterial Meningitis: Antimicrobial and General" is the topic of Dr. A. Smith in Part V.

376. Smith, David W., and Gong, Bradley T.: "Scalp Hair Patterning as a Clue to Early Fetal Brain Development," *Journal of Pediatrics*, 83:374-380, September, 1973.

Scalp hair patterning and hair follicle development were studied in normal fetuses, normal Caucasian children, and in children having severe defects of early brain development and function. The normal development and patterning as well as the findings regarding the abnormal patterning are described. The following hypothesis is presented. "Scalp hair patterning is determined at 10 to 16 weeks of fetal life and is secondary to the growth and shape of tissues which underlie the fetal skin, especially the brain. Thus aberrant scalp hair patterning may be utilized as a clinical indicator of aberrant growth and/or shape of the early fetal brain prior to 16 weeks' gestation."

377. "Smoking Stunts (Fetal) Growth," *Medical World News*, 14:19, February 2, 1973.

Findings in the "latest" report of the National Clearinghouse for Smoking and Health are presented. Evidence indicates relationships between cigarette smoking during pregnancy and both low birth weight and higher fetal and neonatal mortality rates.

378. Solomons, Gerald, and Solomons, Hope C.: "The Physician and Psychological Appraisal," *Developmental Medicine and Child Neurology*, 15:95-103, February, 1973.

Treatment by the physician of the handicapped child as a 'whole' child requires that the physician have a basic knowledge of psychology and the emotional problems

of such children. The term "intelligence" and its measurement are discussed. Tests frequently used to assess infant development, childhood ability, and perception are individually reviewed. Achievement and personality tests are also considered. "The need for co-operation between psychologist and physician in the care and education of handicapped children" is stressed.

379. South, Joanna, and Naldrett, Janet: "The Effect of Vaginal Bleeding in Early Pregnancy on the Infant Born After the 28th Week of Pregnancy," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:236-241, March, 1973.

A study was conducted on vaginal bleeding before week 28 of pregnancy in 7,824 mothers who delivered single infants. Of these 7,824, a total of 1,226 (16%) were found to have had some vaginal bleeding before the 28th week. With regard to these 1,226 women, there was a significantly lower mean birth weight of their infants, there was a greater risk of premature labor, congenital abnormalities were found to occur more often, their babies were more likely to be light-for-dates, and the perinatal death rate was increased. These results are discussed.

380. Spellacy, W.N.: "Human Placental Lactogen in High-Risk Pregnancy," *Clinical Obstetrics and Gynecology*, 16:298-312, March, 1973.

Summarized in this article is the available data concerning the clinical usefulness of measuring human placental lactogen (HPL) in high-risk pregnancy. The following pregnancy complications are individually discussed: threatened abortion, diabetes mellitus, Rh sensitization, hypertensive toxemia, postmaturity, intrauterine growth retardation, anemia, and the presence of various fetal distress signs. "Although the present data suggest that this hormone offers little help to the clinician in managing the gestation complicated by diabetes mellitus or Rh sensitization, it does appear to be able to identify the infant-placental units which are in serious difficulty from complicating hypertensive toxemia, postmaturity or idiopathic placental insufficiency with its associated intrauterine growth retardation."

381. Spellacy, W.N.; Buhi, W.C.; Hilgers, T.; and Birk, S.A.: "Neonatal Urine Insulin Excretion and Its Relationship to Infant Hypoglycemia," *American Journal of Obstetrics and Gynecology*, 115:924-928, April 1, 1973.

In this study on neonatal hypoglycemia, the carbohydrate metabolism of 110 women was studied by performing intravenous glucose tolerance tests during the last trimester of pregnancy. The infants of these women were then closely studied regarding the insulin content of their urine and the urine insulin/creatinine (IC) level. Fasting blood glucose measurements were also obtained, and a close record of caloric intake was kept. Results are presented separately for the 88 normal infants, the 16 infants of diabetic mothers (IDM), and the 6 hypoglycemic infants. A significant positive correlation was found between the urine I/C level of the normal infants and the age of the infants. While there was little change observed in the I/C level of the neonate on days 1 to 4 of life (mean 35.4 μU per milligram), there was a clear elevation by day 5 and after (mean on days 5 to 8 = 109.2 μU per milligram). This increase in I/C level was found to be significantly related to the infants' increased caloric intake. The infants who developed hypoglycemia were found to have had a urine I/C level that was 3 times greater on day 1 of life than was that of the normal infants on day 1. "Since this latter condition may produce permanent brain damage, it is suggested that a urine I/C screening test be performed on day 1 in order to identify the high-risk infant prior to the development of neonatal hypoglycemia."

382. Spellacy, W.N.; Buhi, W.C.; Riggall, F.C.; and Holsinger, K.L.: "Human Amniotic Fluid Lecithin/Sphingomyelin Ratio Changes With Estrogen or Glucocorticoid Treatment," *American Journal of Obstetrics and Gynecology*, 115:216-218, January 15, 1973.

Such changes were studied by performing transabdominal amniocenteses of 2 week intervals between the 28th and 32nd weeks of gestation on a total of 51 women having either normal or Rh-sensitized pregnancies. The L/S ratio was then later determined from each of these amniotic fluid samples. The treatment of these women during the 2 week interval was as follows: 1 group of 32 women received no steroids, 1 group of 9 women received an estrogen steroid, and 1 group of 10 women received a glucocorticoid steroid. A comparison of the samples from before and after treatment indicated that "there was a significantly greater rate of rise of the L/S ratio in the women receiving the glucocorticoid steroid treatment." "Since it has been demonstrated that the lung tissue phospholipid concentration is low in infants who died of respiratory distress syndrome with hyaline membrane disease, the current experiments open the possibility for intrauterine fetal treatment prior to forced premature delivery in complicated high-risk pregnancies. Whether the infants from such treated pregnancies will be able to carry on normal respiration after such treatment is still unknown, but studies of this problem are currently underway."

383. Spennati, Gianfranco; Girotti, Fabrizio; and Orzalesi, Marcello M.: "Urinary Excretion of 5-Hydroxyindolacetic Acid in Low-Birth-Weight Infants With and Without Phototherapy," *Journal of Pediatrics*, 82:286-288, February, 1973.

Such excretion was studied as an index of serotonin metabolism in 31 low birth weight neonates. Serotonin metabolism has been found to be affected by light. The study was thus conducted to determine "the possible effects of light on serotonin metabolism in low-birth-weight infants undergoing phototherapy." Of the 31 infants, 16 had moderate to severe physiologic jaundice and received phototherapy for 3 consecutive days. The other 15 infants had slight or no jaundice and received no phototherapy (controls). Black masks covered the eyes of all of the infants during the study period. No significant differences in the daily excretion of 5-hydroxyindolacetic were found between the 2 groups. "Our observations suggest that phototherapy does not produce appreciable changes in serotonin metabolism in low-birth-weight infants (with their eyes protected) when compared to unirradiated control subjects."

384. Sprague, Arnold D.; Duhring, John L.; Moser, Russell J.; and Hollingsworth, Dorothy: "Maternal and Fetal Levels of HCS in Preeclampsia," *Obstetrics and Gynecology*, 41: 770-773, May, 1973.

Venous blood was collected from 30 preeclamptic and 30 normal women during the latent phase of labor, and fetal blood samples were collected from the umbilical cord of the offspring of the 60 patients. Human chorionic samatomammotropin (HCS) levels were determined in the samples by use of a radioimmunoassay technique. The maternal HCS level was found to be 10.6% lower in the preeclamptic patients while the fetal HCS level was 57.1% higher in the infants of the preeclamptic mothers. "Further studies will be required to determine if the evaluation in fetal HCS levels in preeclampsia is due to fetal demand or simply the result of a malfunctioning placenta."

385. Stembera, Z.K., and Herzmann, J.: "Evaluation of the DHEA-S Test as an Index of Fetoplacental Insufficiency," *Journal of Perinatal Medicine*, 1:3:192-197, 1973.

The administration of dehydroepiandrosterone-sulphate (DHEA-S) to the mother has been found to cause the estriol level to be a more reliable indicator of fetal status. This DHEA-S test was performed as described on 48 women. The clinical state of the newborn, which was divided into 4 classes, was compared to the following 4 parameters of DHEA-S; "a) initial value, b) time of peak excretion, c) height of the peak, d) total amount of excreted estriol after DHEA-S administration." A scoring system with points allotted to each of the 4 parameters was developed. The sum was then seen to express "the functional activity of the fetoplacental unit, which correlated well with the clinical state of the newborn." This system was then developed further in order to determine a more detailed prediction of the fetal status. This described system used a small computer, and a parameter diagnosis matrix was devised in 80 cases. "From the set up matrix, the probability of the individual diagnosis for each case was calculated" with good results. "In a further 33 cases of high risk pregnancy the prediction thus determined, correlated in 84 per cent with the actual clinical state of the newborn."

386. Stern, H., and Tucker, S.M.: "Prospective Study of Cytomegalovirus Infection in Pregnancy," *British Medical Journal*, 2:268-270, May 5, 1973.

Studied prospectively during and after pregnancy were 761 English women and 279 Asian women. Of the 761 English women, 58% were found to have antibodies at their first antenatal examination while 90% of the 279 Asian women had antibodies at their first visit. Of those susceptible, 8 English and 3 Asian women developed primary cytomegalovirus infection during pregnancy. Details of these 11 cases are presented. "The overall incidence of fetal infection after primary infection in the mother was almost 50%, and was higher in early pregnancy. One out of the five infected infants was found to be mentally retarded." Findings are discussed in relation to other studies.

387. Sternberg, J.: "Radiation Risk in Pregnancy," *Clinical Obstetrics and Gynecology*, 16:235-278, March, 1973.

This subject is thoroughly considered in this article with the basic concepts of radiobiology reviewed and the possible sources of irradiation during pregnancy and intrauterine life explained. Then discussed are the "effects of irradiation on the natural course of pregnancy," the "effect of in utero irradiation in humans," and the "effects of internal radiocontamination on [the] human fetus." Also described are studies conducted on experimental animals, research on environmental radiation and pregnancy, and the "medico-legal problems" which arise from using radiation during pregnancy.

388. Stevenson, Roger E.: *The Fetus and Newly Born Infant; Influences of the Prenatal Environment.* St. Louis: C.V. Mosby, 1973. 391 pp.

These influences, which "can penetrate the protective mechanisms available to the fetus and significantly alter the outcome of pregnancy" are catalogued into 5 Parts. They are prenatal immunologic influences, prenatal chemical influences, prenatal infections, prenatal nutrition, and other influences, including radiation, oxygen, malignant diseases, and the age of the mother. Each of these 5 Parts are divided into chapters and further subdivided into specific diseases or adverse influences. Reference lists are abundant throughout.

389. Stimmler, L.; Snodgrass, G.J.A.I.; and Jaffe, Eileen: "Dental Defects Associated With Neonatal Symptomatic Hypocalcaemia," *Archives of Disease in Childhood*, 48: 217-220, March, 1973.

Twelve infants who had experienced hypocalcemic convulsions between ages 5 and 10 days were regularly examined for from 2 to 5 years. "All 12 children had serious abnormalities of enamel of the canine and molar teeth resulting in progressive destruction of these teeth." These findings are illustrated by photographs and are discussed.

390. Stoelinga, G.B.A., and Van Der Werff Ten Bosch, J.J.: *Normal and Abnormal Development of Brain and Behaviour*. Baltimore: Williams and Wilkins, 1971. 348 pp. (Boerhaave Series for Postgraduate Medical Education.)

Contained in this volume are 21 papers with discussions which were presented at a symposium in Leiden, The Netherlands, in November, 1970. Many aspects of this subject are covered in the variety of papers, including the developmental effects of early malnutrition; the growth and development of small-for-dates infants; infantile behavioral and neurological assessment; the "neurological follow-up of infants born after obstetrical complications"; the effects of congenital deafness, congenital blindness, and emotional behavior, respectively, on aspects of growth and/or development; and the effects of early hypothyroidism. Bibliographies follow every article.

391. Stookey, Robert A.; Sokol, Robert J.; and Rosen, Mortimer G.: "Abnormal Contraction Patterns in Patients Monitored During Labor," *Obstetrics and Gynecology*, 42:359-367, September, 1973.

Case reports are presented in this article to illustrate abnormal contraction patterns seen in monitored labors. Methods of monitoring are described as are the abnormal patterns noted. They "include disorders of contraction shape, contraction frequency, and uterine resting tone." "These abnormal patterns appear to be associated with a decrease in the frequency and/or duration of uterine resting periods and with the development of fetal distress." On the basis of the findings in this investigation 4 points are presented to aid in the labor management of high risk patients.

392. Sturbois, G.; Tournaire, M.; Ripoche, A.; LeHouezec, R.; Breart, G.; Chavinie, J.; and Sureau, C.: "Evaluation of the Fetal State By Automatic Analysis of the Heart Rate. 1. Deceleration Areas and APGAR Score," *Journal of Perinatal Medicine*, 1:4: 235-244, 1973.

Presented in this article are "preliminary computation results of FHR deceleration areas made by a special purpose digital computer." These areas were then compared to the Apgar score at one minute. Methods are described. Monitored were 97 patients of whom the majority were high risk pregnancies. Three kinds of FHR deceleration areas were obtained as described: "1) total deceleration area (At), 2) residual deceleration area (Ar), 3) simultaneous deceleration areas (As)." When computation results were correlated with 1 minute Apgar scores, "highly significant correlations for each type of the area" were found. "By means of this computation, apparently deceleration areas are a more reliable parameter of fetal distress than the time relationship between deceleration and uterine contractions."

393. Sutherland, H.W.; Stower, J.M.; Cormack, J.D.; and Bweisher, P.D.: "Evaluation of Chlorpropamide in Chemical Diabetes Diagnosed During Pregnancy," *British Medical Journal*, 3:9-13, July 7, 1973.

Of 180 women diagnosed by the intravenous glucose tolerance test as having chemical diabetes for the first time during pregnancy, 50 were given chlorporpamide therapy for the remainder of pregnancy in a daily dosage of 100 mg. The 2 groups were compared, and findings are reported regarding maternal factors, fetal metabolic factors, and obstetric and perinatal mortality factors. "It can be concluded that maternal chlorporpamide therapy did not produce excessive weight of the fetus in utero." There was no evidence of hypoglycemia or hyperinsulinism in either the chlorpropamide-treated mothers or in their newborns at delivery. There were 2 fetal deaths in the chlorporpamide-treated group, but neither were likely to be due to the therapy. "Thus chlorporpamide in a dose of 100 mg a day has been shown to reverse chemical diabetes diagnosed and treated in pregnancy without apparent risk to the fetus."

394. Takemura, Hikaru: "Pathophysiological Classification of Perinatal Depressions and Cybernetics in Obstetrics; A Working Hypothesis for a Model of Life," *Journal of Perinatal Medicine*, 1:1:24-35, 1973.

Such a classification system is presented. It is "based on the pathophysiological hypothesis of how a fetus is jeopardized." First, a model of fetal circulation is presented, and the pathogenesis of late and variable FHR decelerations is discussed. On the basis of this, fetal distress is classified into 3 types: acute, subacute, and chronic. Each of these is described, and it is shown that "these three types of fetal distress correspond to their own spatial as well as frequency domains in the genesis of hypoxia in utero." But these 3 types can not explain the pathogenesis of all perinatal depressions. Thus a classification of perinatal depressions is presented which contains 5 categories based on "how fast a fetus can be jeopardized." Each category "corresponds to the dysfunction of one of the multiple loop feedback control systems of life: the nervous, circulatory, respiratory, metabolic and organic subsystems, each of which is to be tested by their own specific electrical, mechanical, physico-chemical, biochemical and biological parameters." This hypothesis is further explained.

395. Targett, Christopher S.; Gunesee, Harichchha; McBride, Frances; and Beischer, Norman A.: "An Evaluation of the Effects of Smoking on Maternal Oestriol Excretion During Pregnancy and on Fetal Outcome," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:815-821, September, 1973.

Previous research in the area is reviewed. A total of 1000 pregnant women were studied with regard to smoking habits, urinary estriol excretion, and fetal outcome. In this group of 1000 women, 38.7% were smokers and 13.7% were found to have subnormal estriol excretion. The incidences of fetal growth retardation and perinatal mortality were both found to be significantly greater in the group of women who had low estriol excretions. A highly significant correlation was found between smoking and intrauterine growth retardation. No significant difference in the incidence of low estriol excretion was found between the smokers and the non-smokers. Data on these and other findings are presented and discussed. It is felt that "further study is required to evaluate the effects of heavy smoking on feto-placental function." On the basis of the results of this study, "hypoxia is probably not the important influence causing fetal growth retardation in smokers."

396. Tchilinguirian, Nubar, G.O.: "Fetal Monitoring in High-Risk Pregnancy," *Clinical Obstetrics and Gynecology*, 16:329-346, March, 1973.

The various methods of fetal monitoring are explained, and the application of fetal monitoring to the management of the high-risk fetus is discussed. Then described is the approach of monitoring the high-risk fetus taken by those in the Department of Obstetrics and Gynecology at Temple University Health Sciences Center in Philadelphia. "In conclusion we emphasize that no technique for monitoring the high-risk fetus is effective without a substantial amount of training on the part of the obstetrician; however, when several methods are used simultaneously there is a marked decrease in perinatal mortality and morbidity."

397. Teoh, Eng Soon; Law, Y.K.; Ambrose, Anselm; and Ratnam, S.S.: 'Amniotic Fluid Creatinine, Uric Acid and Urea as Indices of Gestational Age," *Acta Obstetricia et Gynecologica Scandinavica*, 52:4:323-326, 1973.

In order to determine the usefulness of these measurements in assessing gestational age, liquor samples were obtained during pregnancy in 127 patients, and creatinine, uric acid, and urea were measured as described. The mean concentrations of each of the 3 were found to increase with gestational age. Some 52.9% of the mature fetuses were identified by the index of amniotic fluid creatinine with a false positive estimation of 5%. A total of 41.5% of the mature fetuses were recognized using uric acid concentrations as the index of fetal maturity, and there was a 3.3% false positive pick-up. Urea was not found to be an useful index in the assessment of gestational age. "At the present time it appears that a thorough exploitation of amniotic fluid analyses for fetal maturity should include Nile Blue Sulphate staining, creatinine concentration, uric acid concentration, lecithin concentration and the lecithin/sphingomyelin ratio."

398. Terplan, Kornel L.: "Patterns of Brain Damage in Infants and Children with Congenital Heart Disease," *American Journal of Diseases of Children*, 125:175-185, January, 1973.

Previous research is reviewed. The brains of some 500 infants and children with congenital heart disease were histologically examined in detail as explained. Surgical and nonsurgical cases were considered separately. Histologic findings were classified into 3 main groups: "Infarctions; segmental or diffuse neuronal anoxia and scars from anoxic necroses; and predominant changes in the white matter, including necrosis and/or glial scars." Thromboembolic infarctions were found to be present in 17% of the cases. "They occurred four to five times more often in surgical than in nonsurgical cases, with 18 in direct association with catheterization and 21 following catheterization and surgical procedures." "Anoxic cortical necroses, diffuse or segmental, were four times higher in the surgical group, depending on gradual or rapid reduction of blood flow during and after cardiac surgery." These and other findings are presented and discussed.

399. Theorell, K.; Prechtl, H.F.R.; Blair, A.W.; and Lind, J.: "Behavioural State Cycles of Normal Newborn Infants; A Comparison of the Effect of Early and Late Cord Clamping," *Developmental Medicine and Child Neurology*, 15:597-605, October, 1973.

Such cycles were studied polygraphically in 21 normal neonates on the first and fifth days of life. Five behavioral states are described and were assessed in the infants: 1) quiet sleep, 2) active sleep, 3) quiet awake, 4) active awake, and 5) crying. Values were averaged for the early and late-clamped groups separately. Findings are reported regarding the quantitative distribution of the 5 states, the mean duration of the individual states, and the comparison of the early and late-clamped newborns. Results are discussed. "It is possible that late clamping of the cord represents an additional stress to the neonate and that early clamping confers an advantage on the infant who spends more time awake on the first day, thereby promoting a sound mother and baby relationship." This article is followed by one by H.F.R. Prechtl, et. al. in which a similar study on abnormal infants is reported.

400. Thompson, Horace E.; McFee, John G.; Haverkamp, Albert D.; and Longwell, Freeman H.: "Factors Contributing to Improved Maternal Care and Fetal Outcome in a Medium-Sized City-County Hospital," *American Journal of Obstetrics and Gynecology*, 116:229-238, May 15, 1973.

The factors that have contributed to such improvements at Denver General Hospital are discussed. This hospital is designed to serve low socioeconomic people in the city. These factors include the initiation of such programs as The Denver Neighborhood Health Program, The Denver Maternal and Infant Care Program, and the Denver Family Planning Program. Also there has been an increase in the hospital and clinic staff, there was erected a new hospital with modern equipment, there have been changes observed in the patient population, new techniques and methods have been introduced, and several other changes have been made. These factors are summarized and further efforts which must be made to improve maternal care and fetal outcome are described. "During the past [illegible] years the perinatal mortality rate at Denver General Hospital has been reduced from 4.1 to 2.7 per cent." Other physicians contribute to a discussion following the text of the article.

401. Tohen, Alfonso Z.: *Manual of Mechanical Orthopaedics*. Springfield, Ill.: C.C. Thomas, 1973. 319 pp.

In this book are described and pictured the characteristics and uses of the principle orthopedic equipment currently being utilized to treat and rehabilitate disorders of the musculoskeletal system. The 5 chapters are concerned with prosthetic devices, orthopedic or orthotic devices, orthopedic shoes and shoe alterations, crutches and canes, and wheelchairs, respectively. There are many, many illustrations and a bibliography. The text was translated from the Spanish by Drs. Robert W. Milam and Enrique Lopez.

402. Touwen, Bert C.L.; and Prechtl, Heinz, F.R.: *The Neurological Examination of the Child With Minor Nervous Dysfunction*. London: Spastics International Medical Publications in association with Heinemann Medical Books, 1970. 105 pp. (Clinics in Developmental Medicine, No. 38.)

Presented in detail in the 11 chapters of this book is a neurological examination procedure for the detection of minor nervous dysfunction in children. After the design of such a procedure is explained in Chapter 1, the various tests performed are described and pictured in the following 7 chapters. Included are tests to assess the child when sitting, standing, walking, and lying; examination of the reflexes; assessment of the trunk of the child; and assessment of the head. Other aspects to be considered are discussed in Chapter 9. They include dominance, fine motor coordination, sensory function, and speech and language. "Interpretation and Diagnosis" are considered in Chapter 10, and "The Relationship Between Neurological Dysfunction and Behaviour" is briefly discussed in Chapter 11. The form used in scoring the examination is included as is a bibliography.

403. Townsley, John D.; Gartman, Linda J.; and Crystle, C. Deans: "Maternal Serum 17β-Estradiol Levels in Normal and Complicated Pregnancies: A Comparison With Other Estrogen Indices of Fetal Health," *American Journal of Obstetrics and Gynecology*, 115:830-834, March 15, 1973.

Maternal serum 17β-estradiol (SE_2) levels were serially determined as described and compared to levels of serum estriol (SE_3), levels of 24-hour urinary estrogens (UE),

and determinations of urinary estrogen/creatinine (E/C) ratios in 20 normal and 31 complicated pregnancies. Using the SE_2 samples from the uncomplicated patients, the normal range of SE_2 values during the last 10 weeks of pregnancy was determined. SE_2 values were compared to the other measures of fetoplacental function in the complicated pregnancies with data presented. "It is concluded that the high incidence (26 per cent) of misleading low SE_2 patterns in complicated pregnancies with normal fetal outcome limits the value of this index. Serial UE, E/C, total creatinine excretion, and 24 hour urine volume currently provide the most reliable data to monitor estrogen metabolism as one parameter of fetoplacental well-being."

404. "Tracing Behavior to Lead Trace Levels," *Medical World News*, 14:52D, January 19, 1973.

Described is a study by Doctors Brigitte de la Burdé and McLin S. Choate, Jr. of the Medical College of Virginia in which 70 asymptomatic, lead-exposed children were compared with 72 controls regarding "their IQ, fine and gross motor performance, concept formation, and behavior during the test situation." All of the children were 4 years of age. Findings are briefly presented for each area tested. "Two thirds of the control children, but only one third of the lead-exposed ones, performed normally in all areas tested."

405. Tsang, Reginald C.; Light, Irwin J.; Sutherland, James M.; and Kleinman, Leonard I.: "Possible Pathogenetic Factors in Neonatal Hypocalcemia of Prematurity," *Journal of Pediatrics*, 82:423-429, March, 1973.

Gestational age, hyperphosphatemia, hypomagnesemia, increased urinary calcium losses, and parathormone responsiveness were studied with regard to their possible roles in the pathogenesis of neonatal hypocalcemia. A total of 73 neonates were studied with 16 being considered as full term and 57 as preterm. Twenty-four of the 57 premature neonates received parathormone as described. Clinical data on the infants and methods of study are presented. There was a significant correlation found between serum calcium values at 12-72 hours of age and gestational age thus indicating a high incidence of hypocalcemia in premature infants. Asphyxia at birth and hyperphosphatemia at birth were also found to be associated with neonatal hypocalcemia. "Hypomagnesemia, increased urinary calcium losses, and unresponsiveness to parathormone are not causes of neonatal hypocalcemia of prematurity." A hypothesis for the pathogenesis of neonatal hypocalcemia is presented. "The study suggests that neonatal hypocalcemia results from functionally immature or suppressed parathyroids that are unable to maintain normocalcemia in the presence of hyperphosphatemia."

406. Tutera, Gino, and Newman, Robert L.: "Placental Localization and Diagnosis of Antenatal Hemorrhage by Ultrasonography," *Obstetrics and Gynecology*, 42:684-688, November, 1973.

Cases where placental localization is especially important are described as is the ultrasonographic procedure that was used for placental localization in a study of 51 gravid patients. These women "were scanned prior to a) amniocentesis or b) cesarean section, as part of a fetal growth curve study, and c) in every case of third trimester bleeding." All of these 51 cases were diagnosed correctly. There were 5 cases of placenta previa and 25 cases of posterior placenta. Placental localization by ultrasonography as an integral part of amniocentesis is discussed. It is also "recommended prior to cesarean section and for diagnosing the varied causes of antenatal hemorrhage."

407. U.S. Maternal and Child Health Service. *Research to Improve Health Services for Mothers and Children.* Washington, D.C.: U.S. Gov't. Print. Off., 1973. 29 pp. (DHEW Publ. No. [HSM] 73-5116.)

In this booklet are presented brief summaries of the reports of research projects conducted in the Maternal and Child Health Service. Among the projects reported upon is "The Care-by-Parent Unit for Hospitalization of Children" at the University of Kentucky, a study of adolescent health in Harlem, 2 projects concerned with adolescent pregnancy, a "Radiographic Study of Hip Dysplasia in Cerebral Palsy" by Dr. J.V. Basmajian at Emory University, a study on the "Analysis and Classification of Infant Food Composition" by Drs. Samuel J. Formon and Thomas A. Anderson at the University of Iowa, and a study on the "Effectiveness of Counseling at the Time of Pregnancy Tests" conducted by Dr. Marvin L. Dietrich at the University of Nebraska.

408. Umansky, Richard: "The Hand Sock, An Artificial Handicap to Prehension in Infancy, and Its Relation to Clinical Disuse Phenomena," *Pediatrics*, 52:546-554, October, 1973.

The developmental use of the arm for prehension, etc. in the normal child is described. A study was conducted in which the effects of temporarily restricting prehension in 57 normal infants, ages 4 to 12 months, were investigated. Prehension was restricted by placing a soft sock over 1 hand and forearm. Methods of study are described, and results are presented for the infants at from 4 to 6 months of age and from 6 to 12 months of age with the response differences with age noted. "Prehensile behavior was usually altered in ways not directly attributable to the mechanical restriction of the sock. Two basic features were noted. First, infants frequently did not attempt to reach and grasp as previously, often leaving the 'socked' arm (SA) idle." "Second, a number of coping responses to the sock were seen, becoming more varied and frequent with increasing age." These responses were listed. Findings are discussed. "The results, which link prehensile disuse to immature concepts of arm function are relevant to pediatric conditions in which excessive arm disuse may occur, including sensory deprivation, hemiplegic cerebral palsy, brachial plexus palsy, and congenital arm amputations fitted with a prosthesis."

409. Ursell, W.: Brudenell, M.; and Chard, T.: "Placental Lactogen Levels in Diabetic Pregnancy," *British Medical Journal*, 2:80-82, April 14, 1973.

In 34 diabetic pregnant patients a total of 219 measurements of serum human placental lactogen (HPL) level were performed. In 11 of the 34 patients there was clinical evidence of placental dysfunction. The HPL levels were found to be higher in these patients than in normal pregnancy and were related to both placental and fetal weight. Levels were lower in the patients with placental dysfunction than they were in the other cases. Levels were higher in those patients who required the largest insulin increment to control their diabetes.

410. Valenti, Carlo: "Antenatal Detection of Hemoglobinopathies," *American Journal of Obstetrics and Gynecology*, 115:851-853, March 15, 1973.

A preliminary report is presented on a surgical endoamnioscope (laparoamnioscope) and its uses. The safety of endoamnioscopy and fetal biopsy is currently being investigated in monkeys. "This procedure, if safe, might be used not only for in utero detection of hereditary anemias and other genetic disorders but also for intrauterine therapy."

411. Varma, Thankam R.: "Fetal Growth and Placental Function in Patients With Placenta Praevia," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80: 311-315, April, 1973.

Studied and treated expectantly were 150 patients with placenta previa. Fetal growth was assessed in these patients by means of serial ultrasound cephalometry, and placental function was assessed by means of serial 24-hour total maternal urinary estrogen determinations. Methods are described. Fetal growth was found to correlate well with the number of episodes of bleeding during pregnancy. There were 24 small-for-dates babies born to these 150 patients. Although serial cephalometry was found to be more accurate in predicting the small-for-dates infant than were the serial urinary estrogen output measurements, both methods were felt to be useful in the expectant treatment of placenta previa patients.

412. Varma, Thankam R.: "Prediction of Delivery Date by Ultrasound Cephalometry," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:316-319, April, 1973.

Ultrasound cephalometry was performed twice to assess the date of delivery in 350 patients in whom the duration of gestation was uncertain. Thirty of these 350 patients were subsequently eliminated from the study because of retarded fetal growth. "Of the remaining 320 patients 274 went into spontaneous labour and of these 250 (91.2 per cent) did so within nine days of the estimated date of delivery as determined by ultrasound cephalometry." Ultrasound cephalometry is discussed in relation to the other methods used to assess fetal maturity.

413. Varma, Thankam R., and Curzen, Peter: "The Effects of Abdominal Decompression on Pregnancy Complicated by the Small-for-Dates Fetus," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:1086-1094, December, 1973.

Abdominal decompression was used daily on 70 pregnant women diagnosed as having small-for-dates fetuses. Outcome of these patients was compared to that of 70 similar patients diagnosed as having small-for-dates fetuses but on whom abdominal decompression was not used (controls). "The mean growth rate of the fetal biparietal diameter was 2.08 mm per week in the decompression group and 1.49 mm per week in the control group. The mean 24-hour urinary oestrogen excretion increased more rapidly in the decompression group than in the control group. The incidence of fetal distress was 14.3 per cent in the decompression group and 38.6 per cent in the control group. The incidence of infants with a low Apgar score at one minute was 10 per cent in the decompression group and 38.6 per cent in the control group. The incidence of 'light-for-dates' babies was 25.7 per cent in the decompression group and 83 per cent in the control group. There were two perinatal deaths in the decompression group and eight perinatal deaths in the control group." It is believed that these findings indicate abdominal decompression is beneficial to obstetric patients having small-for-dates fetuses.

414. Varty, Edna: "What About the Integrated Child?," *Special Education*, 62:24-26, March, 1973.

Discussed by the head of The Spastics Society's Ingfield Manor School in Billingshurst, Sussex is a program utilized at this school which is designed to integrate the handicapped child and the staff of the school. The program is based on that of The Institute for the Motor Disabled in Budapest, and is called "conductive education." A weekly timetable is presented to illustrate.

415. Vulliamy, David G.: *The Newborn Child*. 3rd ed. Edinburgh and London: Churchill Livingston, 1972. 189 pp.

This is "a short general guide" to the newborn infant. Although the healthy newborn and his care are considered, most emphasis is placed on abnormal neonatal conditions, including respiratory problems, birth injuries and neurological disorders, infections, blood diseases, and congenital anomalies. There is also a chapter on "low birthweight, pre-term, and post-term infants," There are numerous illustrations.

416. Wagstaff, T.I., and Bromham, D.R.: "A Comparison Between the Lecithin-Sphingomyelin Ratio and the 'Shake Test' for the Estimation of Surfactant in Amniotic Fluid," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:412-417, May, 1973.

The lecithin/sphingomyelin (L/S) ratio and the 'shake test' were used to estimate the surfactant in 190 specimens of amniotic fluid. These 2 tests are described and compared regarding their value in predicting the respiratory performance of the infant at birth and their limitations. "It was concluded that the shake test is valuable only as a screening procedure for determining fetal lung maturity."

417. Walker, David; Grimwade, James; and Wood, Carl: "The Effects of Pressure on Fetal Heart Rate," *Obstetrics and Gynecology*, 41:351-354, March, 1973.

Fetal heart rate response was measured in 25 patients in labor when manual pressure was applied to the abdomen of the mother at 5 pictured positions (A to E). Significant changes in the fetal heart rate could be observed in either direction from the baseline when pressure was applied to each of the 5 areas. A response in either direction was noted most frequently when pressure was applied over the fetal head and decreased "in frequency as the point of application moves down the fetal body away from the head." Bradycardia was found to be the usual response, but tachycardia also occurred frequently, either alone or in association with the bradycardia. These findings are discussed.

418. Walters, J.H.; Effer, S.; Ramaprakash, H.; Milne, J.K.; Harding, P.G.R.; Jaco, N.T.; Sutton, M.; Smith, R.M.; Ho, M.Y.; and Sherrard, Wendy: "Experience With an Obstetrical and Neonatal Intensive Care Unit," *American Journal of Obstetrics and Gynecology*, 115:307-315, February 1, 1973.

This is a follow-up report to December, 1971 on "a pilot project known as the Obstetrical and Neonatal Intensive Care Unit in the Department of Obstetrics and Paediatrics of the University of Western Ontario Medical Faculty at St. Joseph's Hospital, London, Ontario." This unit began operation in July, 1967. The Unit and its services are described with much data presented. During the 4 1/2 year period reported upon there were 913 deliveries of high-risk infants in the Unit. Three hundred of these infants were followed to age 3 years. Test results are presented for the Denver Developmental Screening Test (DDST) and the Stanford-Benet (S-B) test. "Intensive antenatal and immediate postnatal care by an obstetric-pediatric team reduced the sequela of physical or mental retardation to 3 per cent (DDST) and 11.6 per cent (S-B)." Further discussion is conducted following the article.

419. Ward, Humphry; Rochman, Hyman; Varnavides, Lysandros A.; and Whyley, Geoffrey A.: "Hormone and Enzyme Levels in Normal and Complicated Pregnancy," *American Journal of Obstetrics and Gynecology*, 116:1105-1113, August 15, 1973.

Urinary estriol estimations and serum human placental lactogen levels (2 hormonal assays) as well as serum diamine oxidase levels and serum heat-stable alkaline phosphatase levels (2 enzymal assays) were determined and compared in normal and complicated pregnancies. The group of complicated pregnancies included women having essential hypertension, diabetes mellitus, twin pregnancy, dymature babies, pre-eclamptic toxemia, threatened abortion, or pregnancy resulting in intrauterine or neonatal

death. Separate findings are presented for each of these subgroups. "Neither of the enzyme levels (serum heat-stable alkaline phosphatase and serum diamine oxidase) were found to be of clinical value. Serum human placental lactogen levels were consistently decreased in essential hypertension and in preynancies terminating in stillbirth. Urinary estriol estimation proved to be more reliable, especially in monitoring the 'light-for-dates baby' pregnancies and those pregnancies associated with perinatal death."

420. Ward, Humphry; Whyley, G.A.; and Millar, M.D.: "A Comparative Study of Diamine Oxidase in Amniotic Fluid and Serum in Normal Pregnancy and in Pregnancy Complicated by Rhesus Iso-immunization," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:525-530, June, 1973.

Diamine oxidase (DAO) estimations were performed as described in the amniotic fluid and serum of 65 women, of whom 28 had rhesus iso-immunization, to determine if there was a relationship between the DAO levels in amniotic fluid and in serum and also to determine if there was a relationship between the enzyme levels and the optical density difference (Δ) at 450 mμ in rhesus iso-immunization. Results are presented with regard to the DAO levels found in the amniotic fluid specimens, the findings when the DAO levels in serum and amniotic fluid were compared at various stages of pregnancy, and the DAO levels found in the cases of rhesus iso-immunization. On the basis of the results, "it is suggested that the amniotic fluid/serum DAO ratio taken in conjunction with the Δ450 mμ peak might provide a guide to the ultimate outcome for the fetus."

421. Watanabe, Kazuyoshi; Iwase, Katsuhiko; and Hara, Kimiko: "The Evolution of EEG Features in Infantile Spasms: A Prospective Study," *Developmental Medicine and Child Neurology*, 15:584-596, October, 1973.

Studied were 32 infants who had been periodically examined prior to the onset of infantile spasms. The infants were divided into 3 groups "according to their possible etiology:" 1) prenatal group - 17 infants, 2) perinatal group - 8 infants, and 3) postnatal group - 7 infants. These groups are further described as are the EEG findings for each group. "In the perinatal and postnatal groups, the initial EEG showed severe abnormalities suggestive of severe brain pathophysiology resulting from the acute phase of the cerebral insult. In the perinatal group, the neonatal EEGs showed flat activity or a burst-suppression pattern. In the postnatal group, the EEG at the time of the initial cerebral lesion showed marked slow wave dysrhythmia. These early EEG changes in both groups were followed by improvement to normal or mildly abnormal recordings. After the stages of focal or multifocal abnormality, hypsarrhythmia or diffuse polyspike and wave discharges developed. In the prenatal group, the initial EEG was normal or mildly abnormal. The evolutionary changes of the EEGs thereafter were similar to those in the other two groups. The development of hypsarrhythmia or diffuse polyspike and slow wave discharges usually coincided with the onset of spasms, although in some cases the spasms were associated with focal EEG abnormality."

422. Wealthall, S.R., and Todd, J.H.: "B-scope Echoencephalography in the Infant," *Developmental Medicine and Child Neurology*, 15:338-347, June, 1973.

The study reported in this article is presented in 2 parts. In Part 1, two B-scope techniques and their equipment that may be used with infants are explained, results

with these techniques and equipment are described, and the 2 methods are compared. "It would seem that the most suitable system for studying infants with neurological signs would combine both methods - a flexible-faced water-bath system to identify the gross anatomy within the skull and the diagnostic areas, and a hand-held compound scanning system to provide detail and to measure structures." In Part 2, B-scope findings in 63 infants are reported. Of these 63, 21 infants had "localising or progressive neurological signs," 23 had "large heads," and 19 had "spina bifida or a history of meningitis." The role of B-scope echoencephalography in infants is then discussed with regard to each of these 3 types of presentation.

423. Weber, Bruce A.: "The Current Status of AEA (Averaged Electroencephalic Audiometry) With Children," *Clinical Pediatrics*, 12:629-630, November, 1973.

AEA is explained, its advantages and disadvantages are discussed, and 3 cases are briefly described to illustrate the types of children with whom AEA is used. AEA is seen to be useful when the hearing of the child cannot be adequately evaluated by behavioral audiometry. However, 3 disadvantages are listed: "1) the equipment necessary is highly expensive," "2) the test itself is time-consuming," and "3) the testing must be conducted by someone who is highly trained."

424. "Weighing Evidence That Links Epilepsy Drugs to Fetal Defects," *Medical World News*, 14:23+, April 13, 1973.

Studies and opinions on the effects on the fetus of the maternal use of anticonvulsant drugs are presented.

425. Wender, Paul H.: "Minimal Brain Dysfunction in Children: Diagnosis and Management," *Pediatric Clinics of North America*, 20:187-202, February, 1973.

Among the aspects reviewed in this article are the characteristics of minimal brain dysfunction, including motor behavior, attention difficulties, cognitive difficulties, learning difficulties, lack of impulse control, negative interpersonal relations, emotional abnormalities, problems in the family of the child, neurological concomitants, congenital stigmata, and psychological abnormalities. Also considered are the changing manifestations of minimal brain dysfunction with age, the prevalence, the diagnosis, the management, and intervention.

426. Westberg, Jimmie A.; Clark, W. Dayton; and Webb, Gilbert A.: "An Evaluation of High-Risk Maternity Care in a Community Hospital," *American Journal of Obstetrics and Gynecology*, 116:557-563, June 15, 1973.

Reported are the characteristics and results of a program of high-risk maternity care initiated at the Children's Hospital and Adult Medical Center of San Francisco in 1967. In 1967 2 clinics were begun - the Adolescent Maternity Clinic and the Special Maternity Clinic. Criteria for admission are listed. A total of 504 patients were cared for in these 2 clinics "with the resultant perinatal loss approaching that of the surrounding metropolitan area." Criteria for statistics of admission to the neonatal intensive care unit (NICU) are described as is an analysis made of the perinatal deaths. Further discussion by other physicians is conducted following the text.

427. Westin, B., and Söderberg, G.: "Equipment for Direct FHR Monitoring During Labour," *Acta Obstetricia et Gynecologica Scandinavica*, 52:1:42-46, 1973.

Such commercially available equipment is compared with equipment developed by the authors. Artifacts, which cause difficulties in the interpretation of FHR recordings, can be reduced with the usage of the equipment described by the authors in this article.

428. Whitfield, C.R.; Sproule, W.B.; and Brudenell, M.: "The Amniotic Fluid Lecithin: Sphingomyelin Area Ratio (LSAR) in Pregnancies Complicated by Diabetes," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:918-922, October, 1973.

Amniotic fluid samples were obtained and the LSAR was determined as described in 66 pregnant women who had established diabetes and in 27 women who had latent diabetes while pregnant. All samples were obtained after 32 weeks of gestation. Findings indicated that the terminal rise in the ratio that occurs in normal pregnancies did not occur in almost one third of the pregnancies that were complicated by established diabetes. "The clinical value of this test, in timing delivery to minimize the risk of neonatal respiratory distress, is discussed; its routine use in pregnancies complicated by established or latent diabetes is advocated."

429. Whittaker, John S.: "A Survey of the Children With Cerebral Palsy Registered at the Ontario Crippled Children's Centre During 1969," *Scandinavian Journal of Rehabilitation Medicine*, 5:111-117, 1973.

Some 316 children were included in this described survey in which Electronic Data Processing was used to tabulate data on the children relative to age, classification of cerebral palsy, distribution of spasticity, severity, mobility, associated abnormalities, prenatal factors, IQ, surgery, and age at the time of diagnosis and initiation of therapy.

430. Williams, B.T., and Lambourne, A.: "The Younger Chronic Sick: How Many Beds," *British Journal of Preventive and Social Medicine*, 27:129-136, May, 1973.

Reviewed are recent surveys conducted in Britain to assess "the need for, and provision of, hospital places for the younger chronic sick." Also a study is reported which was designed "to estimate the optimal number of beds for the younger chronic sick." Included was an estimation of beds needed to provide for holiday relief cases. Findings are presented and summarized.

431. Wilson, Geraldine S.; Desmond, Murdina M.; and Verniaud, Willie M.: "Early Development of Infants of Heroin-Addicted Mothers," *American Journal of Diseases of Children*, 126:457-462, October, 1973.

Thirty infants born to mothers addicted to heroin were followed for from 3 to 34 months with regard to their growth and development. The mothers were classified in 3 groups depending on their drug usage pattern, and the infants were classified in 3 groups depending on their withdrawal symptoms and need for medication. As neonates, withdrawal symptoms were noted in 80% of these 30 infants, and "subacute"

withdrawal symptoms continued for from 3 to 6 months in 60%. Of 14 infants followed for 1 year or longer, 64% were seen to have either behavioral abnormalities (7) or neurological abnormalities (2). Growth was impaired in 4 of the 7 children with behavioral disturbances. "These disturbances appear to be unrelated to subsequent environmental factors." Other findings are described, results are discussed, and conclusions are presented.

432. Winick, Myron; Brasel, JoAnne; and Velasco, Elba G.: "Effects of Prenatal Nutrition Upon Pregnancy Risk," *Clinical Obstetrics and Gynecology*, 16:184-198, March, 1973.

The subject of classifying the "premature" infant is introduced. Normal cellular growth, retarded cellular growth, and the mechanisms which control cellular growth are discussed, as is fetal growth retardation which animal studies have shown may be produced by either placental vascular insufficiency or maternal protein restriction. Biochemical and epidemiologic studies of human fetal growth retardation are then reviewed. Also considered are possibilities relating to the monitoring of the fetal growth rate and the prenatal diagnosis of human fetal growth retardation.

433. Witelson, Sandra F., and Pallie, Wazir: "Left Hemisphere Specialization for Language in the Newborn: Neuroanatomical Evidence of Asymmetry," *Brain*, 96:641-646, September, 1973.

The superior surface of the temporal lobe for the left and right hemispheres was studied in 16 adult and 14 neonatal human brains, which were "free from neurological pathology." Anatomical measurements were taken in order to detect any asymmetry in the area of the superior surface of the temporal lobe known to mediate language. In both the adult and neonatal brains, the left-sided area was found to be significantly larger than the right. "It is suggested that this anatomical asymmetry is present before any environmental effects such as language learning and unimanual preference and may be an important factor in determining the typical pattern of left hemisphere speech lateralization found in most adults. Furthermore, it is suggested that this neonatal asymmetry indicates that the infant is born with a pre-programmed biological capacity to process speech sounds."

434. Withrow, Frank B.: "A Call to Action," *Rehabilitation Literature*, 34:167, June, 1973.

This call, made by the Chairman of the National Advisory Committee on Education for the Deaf and National Advisory Committee on Handicapped Children of the Bureau of Education for the Handicapped, U.S. Office of Education, is directed "to public school districts, private schools, state education agencies, and national programs to provide full comprehensive programs for all handicapped children now." The recommendations for fiscal 1973 made by the National Advisory Committee on Handicapped Children are summarized.

435. Wolf, Steven L., and Basmajian, John V.: "A Rapid Cooling Device for Controlled Cutaneous Stimulation," *Physical Therapy*, 53:25-27, January, 1973.

Described and pictured is the Emory local-cooling device. It is easy and inexpensive to construct and has noted clinical and research applications.

436. Wolinsky, Gloria F., and Koehler, Nancy: "A Cooperative Program in Materials Development for Very Young Hospitalized Children," *Rehabilitation Literature*, 34:34-41+, February, 1973.

Such a program is discussed which was developed with the assistance of the staff of the Regional Special Education Instructional Materials Center at Hunter College, New York City to provide needed materials of an educational and recreational nature for the young exceptional infants and toddlers who were patients at Bellevue Hospital, New York. The means by which these materials were selected is described as are the materials themselves and the reactions of the children to them. The equipment included vinyl crib pockets, items for these pockets such as pictures and figures, noisemakers, squeeze bottles, stuffed dolls, bell bracelets, textured colored cloths, mobiles, busy boards, etc. An outline is presented of the organization of these materials into categories, and actual commercial items that are suggested for purchase are listed, often with order numbers and prices.

437. Wong, Y.K., and Wood, B.S.B.: "Relative Roles of Phototherapy and Phenobarbitone in Treatment of Nonhaemolytic Neonatal Jaundice," *Archives of Disease in Childhood*, 48:704-708, September, 1973.

A total of 61 infants, having plasma bilirubin levels of 15 mg/100 ml or above, were treated in 1 of the following 3 ways: (1) phototherapy for 60 hours, (2) administration of phenobarbitone by injection as described, or (3) a combination of 1 and 2. Infants above and below 2.5 kg birth weight were considered separately. "Infants above 2.5 kg birthweight treated with phenobarbitone only behaved like untreated controls up to 60 hours, and only at 84 hours was a significant fall seen. Infants of 2.5 kg birthweight or less treated with phenobarbitone had significantly higher levels throughout the 84 hours of study." Phototherapy was found to be effective within 24 hours, and the combined treatment of phenobarbitone and phototherapy showed no difference in results than did phototherapy alone. "Phenobarbitone has no place in the management of established jaundice." Findings are discussed.

438. Wood, Carl; Ng, Keng Hing; Hounslow, Dianne; and Benning, Hella: "The Influence of Differences of Birth Times Upon Fetal Condition in Normal Deliveries," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:289-294, April, 1973.

In order "to determine what influence variation of the duration of the second stage and its major components had upon the condition of the fetus," 46 women who had normal vertex deliveries were studied during labor. Six listed events in labor were timed by stopwatch, and intervals between listed events were calculated. Methods of study are explained, and much data are presented. The fetal umbilical vein pH was found to be significantly lower when either of the following intervals were prolonged: 1) the head coming on view with contractions to the end of delivery or 2) the head distending the perineum to the end of delivery. Possible explanations for these findings are presented.

439. Wood, Carl; Ng, Keng Hing; Hounslow, Dianne; and Benning, Hella: "Time - An Important Variable in Normal Delivery," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:295-300, April, 1973.

Twenty-two women were randomly assigned to either a fast or a normal delivery group and were studied as described. Methods used to hasten delivery are explained. The

results indicated "that speeding birth increased umbilical artery and vein blood pH, most probably by reducing fetal asphyxia." These findings and implications are discussed.

440. Woody, Norman C., and Brodkey, Mark J.: "Tanning From Phototherapy for Neonatal Jaundice," *Journal of Pediatrics*, 82:1042-1043, June, 1973.

A case is reported of "tanning" in a Negro infant who received phototherapy as described for neonatal jaundice. An adhesive bandage had been placed on the infant during phototherapy. When the bandage was removed, the tanning was evident. It "still has not faded three months later."

441. Woytón, J.; Sward, J.; Dzioba, A.; Gajewski, A.; Szacki, J.; and Baranowski, H.: "Behaviour of Total Oestrogen, Pregnanediol and Creatinine Levels in the Amniotic Fluid in the Last Weeks of Pregnancy," *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 80:909-911, October, 1973.

Total estrogens, pregnanediol, and creatinine levels were investigated in the amniotic fluid of 3 groups of patients. "In Group I were 11 patients delivered at 35 to 37 weeks of pregnancy; in Group II were 20 patients who were delivered at 38 to 41 weeks; and in Group III were 12 patients who were delivered at 42 weeks or over. All the newborn in Group I showed clinical signs of immaturity, those in Group II were normal, and those in Group III showed signs of postmaturity." Total estrogen levels in Group II were found to be significantly higher than those levels in both Groups I and III. No significant difference in pregnanediol mean levels was found between Groups I and II, but the mean level was significantly increased in Group III patients. The mean levels of creatinine in the amniotic fluid rose steadily during pregnancy. Implications are considered.

442. Wright, F. Howell; Blough, Richard R.; Chamberlin, Antoinette; Ernest, Terry; Halstead, Ward C.; Meier, Paul; Moore, Robert Y.; Naunton, Ralph F.; and Newell, Frank W.: "A Controlled Follow-up Study of Small Prematures Born From 1952 Through 1956," *American Journal of Diseases of Children*, 124:506-521, October, 1972.

Studied at approximately 10 years of age were 70 children, who had had birth weights of 1,500 gm or less and who were born between 1952 and 1956 at the Chicago Lying-In Hospital, and 70 thoroughly matched and paired control children. Final data analysis was based upon 65 of the pairs. All methods of study are reported in detail, and findings are presented with regard to mortality, psychological testing, neurological abnormalities, ocular abnormalities, other physical defects, growth and physical maturation, behavioral characteristics, and postnatal home environment. The experimental design of the study and the results are discussed, and conclusions are presented. "Prematures exceeded their controls in mortality, mental retardation, poor school performance, pyramidal tract disorders, and visual defects." "Pyramidal tract abnormalities with mild to severe functional disability were found in 15.4% of the prematures. None of the controls had disabling pyramidal signs ($P > .5$)." An appendix is included in which are described the methods used to compare the 2 groups of children.

443. Wright, Trevor, and Nicholson, Jacqueline: "Physiotherapy for the Spastic Child: an Evaluation," *Developmental Medicine and Child Neurology*, 15:146-163, April, 1973.

A study involving 47 spastic children under the age of 6 years was conducted in order to assess the value of physiotherapy. The children were assessed both before and after treatment and were randomly assigned to 1 of 3 treatment groups: (1) physiotherapy for 12 months after first assessment; (2) no physiotherapy for 6 months after first assessment followed by treatment for 6 months; and (3) no physiotherapy for 12 months after first assessment. "The parameters studied and subsequently scored were (a) function, (b) range of movement and (c) the presence or absence of the primary automatic reflexes." Methods of assessment are described. Results are presented on the 3 parameters studied, on the mental ability of the children, and on the effects of epilepsy and the growth factor. These results are discussed, and possible criticisms of the study are listed and commented on. "Although physiotherapy in itself was not found to be of value in the treatment of spastic cerebral palsy, there was no doubt that the physiotherapists themselves were of great value." Two appendices dealing with methods of scoring and the details of the treatment are included.

444. [illegible]eger, Anne S.: "Variation of Cord IgM Level With Birth Weight," *Pediatrics*, 51: 616-619, April, 1973.

The value of measuring cord IgM levels in the neonate is discussed. Cord IgM levels from 5,075 infants were analyzed according to birth weight. Methods are described, and the results indicated a gradual rise in cord IgM levels with increases in birth weight between 1,800 gm and 4,000 gm. "Cord IgM levels of infants weighing less than 1,800 gm are generally below 8.9 mg/100 ml which is significantly lower than the mean cord IgM level of 13.8 mg/100 ml for the group as a whole." Research into the relationship between low cord IgM levels and neurological abnormalities and cord IgM levels and gestational age is reviewed.

445. Yeh, Sze-Ya; Forsythe, Alan; and Hon, Edward H.: "Quantification of Fetal Heart Beat-to-Beat Interval Differences," *Obstetrics and Gynecology*, 41:355-363, March, 1973.

Described is a numerical method developed to quantitate the beat-to-beat variations of the fetal heart rate (FHR). The technique involves 2 explained indices: "'interval index (II)' measures the relatively long-term fluctuations in fetal R-R intervals; and 'differential index (DI)' measures the relatively short-term fluctuations in fetal R-R intervals." "This method appears to be valuable for assessing the status of the nervous mechanisms controlling the fetal heart." Uses of this method during labor and in the evaluation of placental function are discussed. Several FHR records are included to illustrate.

446. Yu, Mang C.; Bakay, Louis; and Lee, Joseph C.: "Ultrastructure of the Central Nervous System After Prolonged Hypoxia. I. Neuronal Alterations," *Acta Neuropathologica*, 22:222-234, 1972.

Rats were housed in a described hypoxic chamber where chronic hypoxia was induced for up to 24 days. The rats were sacrificed on various days during the experiment, and the nerve cells of the central nervous system were studied using electron microscopy. Results are presented regarding the alterations seen after from 1 to 4 days in the hypoxic environment and after from 6 to 24 days of exposure. "These results indicated that prolonged hypoxia causes profound changes in the central nervous tissue that do not occur in the acute state."

447. Yu, Mang C.; Bakey, Louis; and Lee, Joseph C.: "Ultrastructure of the Central Nervous System After Prolonged Hypoxia. II. Neuroglia and Blood Vessels," *Acta Neuropathologica*, 22:235-244, 1972.

Findings are presented regarding changes seen in the neuroglial cells and small blood vessels of the central nervous system of rats exposed to chronic hypoxia as described for from 1 to 24 days. Electron microscopy was used in the investigation.

448. Zadek, Robert E.: "Orthopedic Management of the Child With Multiple Handicaps," *Pediatric Clinics of North America*, 20:177-185, February, 1973.

Some general principles in the orthopedic management of such children, the orthopedic examination, and the planning of treatment are factors discussed in the first portion of this article. Then considered are specific orthopedic abnormalities including cerebral palsy, scoliosis, myelodysplasia, rheumatoid arthritis, and progressive neuromuscular disease.

449. Zelson, Carl; Lee, Sook Ja; and Casalino, Marie: "Neonatal Narcotic Addiction," *New England Journal of Medicine*, 289:1216-1220, December 6, 1973.

Studied and compared were infants born to 46 methadone-addicted women and infants born to 45 heroin-addicted women. The 2 groups of cases were compared regarding maternal age, prenatal care, birth weight, Apgar scores, signs of withdrawal, treatment, and mortality. Findings indicated "that the withdrawal syndrome occurred with equal frequency in both groups, but that the signs of withdrawal and the severity of these signs were greater among the methadone-exposed infants." "Also, convulsive seizures and severe hyperbilirubinemia occurred more frequently among the methadone infants." These results are discussed and other related studies are reviewed. "The data presented in this study demonstrate that the infants born to addicted mothers are more severely affected by the intrauterine exposure to methadone than to heroin; whether these effects are temporary or of a prolonged nature will only be determined by a long follow-up period. Nevertheless, it is important to consider the possibility that switching pregnant addicts from heroin to methadone can have serious sequelae in the newborn. It is our opinion that methadone should not be used indiscriminately during pregnancy."

450. Zilianti, Mario; Segura, Carlos León; Cabello, Fredy; Benzaguen, José; Romero, Mercédes; and Estrada, Miguel Angel: "Studies on Fetal Bradycardia During Birth Process: I," *Obstetrics and Gynecology*, 42:831-839, December, 1973.

Some 37 cases were studied as described during the birth process in this investigation, the purpose of which was "to show that deep and sustained bradycardia is a common FHR [fetal heart rate] pattern throughout this transition period, and that clamping of the cord, immediate or delayed, performed during apnea, regular, or irregular breathing does not modify the evolution of the NHR [neonatal heart rate] which is related only to the characteristics of the initial respiratory movements." Findings are discussed.

451. Zilianti, Mario; Segura, Carlos León; Cabello, Fredy; Benzaguen, José; Caicedo, Carlos Jimenez; and Estrada, Miguel Angel: "Studies on Fetal Bradycardia During Birth Process: II," *Obstetrics and Gynecology*, 42:840-844, December, 1973.

Compared regarding scalp blood pH, blood pH of the umbilical artery, blood pH of the umbilical vein, venous-arterial pH difference, and Apgar score were 18 cases in which the expulsion time, as defined, was 120 seconds or less and 11 cases in which the expulsion time was more than 120 seconds. All of the 29 cases had shown normal fetal heart rate (FHR) during labor, normal scalp blood pH, and no cord entanglement at delivery. In the previous study the beginnings and lengths of the expulsion period were found to be "essentially the same" as those of fetal birth bradycardia. In

the cases where fetal bradycardia in the birth process was prolonged (>120 seconds), "the pH of the blood of the umbilical artery fell, while that of the blood of the umbilical vein remained virtually unchanged; consequently the venous-arterial pH difference increased." "No such changes were seen if birth bradycardia was of short duration." In the prolonged group there were 4 depressed fetuses while all were vigorous in the group having the shorter expulsion time. "The importance of careful supervision of the fetus in the last phase of labor and of obstetric intervention to shorten expulsion is stressed."

452. Zimmerman, David R.: *RH; The Intimate History of a Disease and Its Conquest.* New York: Macmillan, 1973. 371 pp.

In this book written by a journalist, the author describes the "series of observations, intuitions and deductions" that led to the conquest of the disease, erythroblastosis fetalis, from the point of view of those researchers who participated in this conquest. It is written in the context of a medical news story. Background material of early research in blood and erythroblastosis is presented in the first 5 chapters. Emphasis is then placed on the events that took place in the 1960s. A glossary of terms and several pages of notes are included.

453. Zoumboulakis, D.; Anagnostakis, D.; Arseni, A.; Nicolopoulos, D.; and Matsaniotis, N.: "Gentamicin in the Treatment of Purulent Meningitis in Neonates and Infants," *Acta Paediatrica Scandinavica*, 62:55-58, January, 1973.

The experience of the authors in the treatment of bacterial meningitis in 8 neonates and 13 infants under the age of 8 months is related. All of these patients had failed to improve after described "'initial' antimicrobial therapy." Treatment methods are explained. "Two infants died and one developed hydrocephaly, but the remaining 18 recovered and the cure seems complete and permanent." These findings and their implications are discussed.

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